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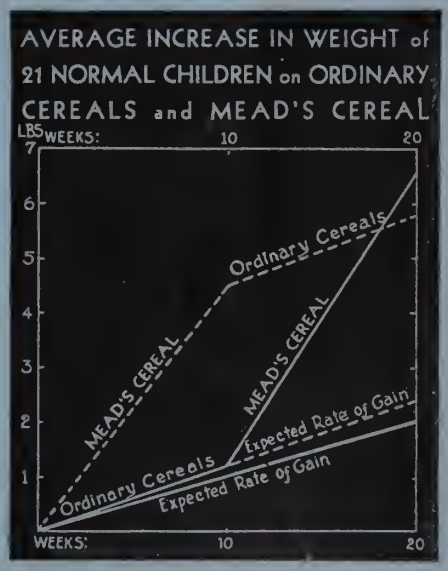
[1]Summerfeldt, P.: *Am J. Dis. Child.* 43:285-290; Feb. 1932.



The striking feature was that the rate of gain of the two groups of children increased or dropped in ratio to the amount of Mead's Cereal in their diet.[1]

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SPONTANEOUS SUBARACHNOID HEMORRHAGE: REPORT OF FOUR CASES.*

STAIGE D. BLACKFORD, B. S., M. D., University, Va.

Spontaneous subarachnoid hemorrhage is the name generally applied to the clinical condition characterized by the sudden onset, without trauma, of certain intracranial or meningeal symptoms accompanied by homogeneously bloody spinal fluid. The consensus of opinion is that this condition occurs not infrequently but is seldom diagnosed. Within the past four years we have recognized four cases on the medical service at the University of Virginia Hospital and our experience with these has convinced us that not only is spontaneous subarachnoid hemorrhage fairly common, but that its recognition and treatment are important.

Wilkes, Gintrac and Hayem[1] described subarachnoid hemorrhage pathologically and clinically in the latter part of the nineteenth century but little attention was paid to their work until, with the advent of lumbar puncture, Froin's[1] thesis in 1904 renewed interest. In the following years many observations on the subject were published in Europe but apparently were neglected by British and American physicians. The first American reference to it occurred in 1914 when Leopold[2] published three case reports. In England, Symonds[3] reviewed the literature comprehensively in 1924. At that time he was able to collect 124 cases and he added three new ones of his own. Since 1926 many articles have appeared both in England and in this country. Josephine Neal[4] revived and stimulated American interest in the matter and for the past five years the condition has been recognized more frequently. Smith's[5] presentation of twelve cases before the Southern Medical Association and Ayer's[6] very recent report of thirty-two cases before the American College of Physicians have done much to clarify its clinical aspects. Symonds' classic article contains a full bibliography to 1924 and the contributions of Smith and Ayer bring the bibliography up to date. Bagley[7] and Forbus[8] have made important recent contributions to the pathologic changes.

Etiology

There are many underlying causes for spontaneous subarachnoid hemorrhage and so it has been repeatedly emphasized that since the hemorrhage is but a symptom, each case deserves thorough etiological study. Aneurysm of a cerebral vessel (of arteriosclerotic, embolic, syphilitic or congenital origin) has been accepted as the most common primary cause. It has been generally stressed that syphilis is a relatively rare cause of these aneurysms. Ayer[6] seems especially impressed with the frequency of congenital aneurysms in or near the Circle of Willis. Forbus[8] has recently shown that miliary aneurysms of the superficial cerebral arteries may occur quite independently of arteriosclerotic or inflammatory cause. He believes that these aneurysms are not congenital malformations as such but are acquired from a combination of focal weakness in the vessel wall at the point of bifurcation resulting from a congenital defect in the muscularis coat, and degeneration of the internal elastic membrane due to continued overstretching from blood pressure. The acute onset of symptoms often follows a hypertension either sustained or paroxysmal (in such conditions as eclampsia, pertussis, epilepsy, childbirth, etc.). Other causative factors that have been mentioned are typhoid fever, the exanthemata, sinus thrombosis, epidemic encephalitis, paralysis agitans, and exposure to sun, lead or alcohol. Certain hemorrhagic diatheses (i. e., pernicious anemia, the leukemias, hemophilia and scurvy) have been held responsible for some cases. Venous anomalies according to Bagley[9] produce the condition in children. Tumors and cysts of the brain are considered uncommon causes. Goldflam[1] has suggested the possibility of bleeding from vasomotor disturbance but this is questioned by many.

*From the Department of Internal Medicine, University of Virginia Hospital.

Read at the sixty-second annual meeting of the Medical Society of Virginia, in Roanoke, October 6-8, 1931.

Pathology

The pathologic changes vary according to the site and cause of the bleeding. Hemorrhage into the basal subarachnoid space occurs more frequently than over the vault of the brain but the blood may spread over the cortex as well as into the subarachnoid area surrounding the medulla and spinal cord. When the bleeding occurs over the surface of the cerebral hemispheres, Symonds[3] states that the spread is generally slower, but if not restricted, the blood finally arrives at the basal space along the line of the main cortical vessels by way of the sulci. Leucocytic infiltration of the meninges frequently develops as a result of meningeal irritation and sometimes adhesions follow. Bagley[7] has done excellent experimental work in dogs along these lines. The precise spot from which the bleeding occurs has not been located in many instances since the exact site of leakage is often difficult to find when the rupture in the vessel is small and surrounded by clot formation.

Symptoms

The symptoms may be divided into two main groups: (a) those due to mechanical pressure and (b) those due to irritative effects of blood in the subarachnoid space. The initial clinical picture varies according to the localization, the site, the rapidity, and the amount of the hemorrhage. If the spread of the hemorrhage is prevented, signs of localization may appear. When diffusion of the blood occurs, the signs and symptoms of increased intracranial pressure, sometimes even including those of medullary compression, are found and choking of the optic discs and retinal hemorrhages may be seen. Basal hemorrhages generally spread more quickly. The rapidity and amount of extravasation determines the acuteness and severity of the initial symptoms.

The degree of meningeal irritation depends on the amount of blood in the subarachnoid space and the length of time that it has been there. Stiffness of the neck, diffuse pains, general hyperesthesia, Kernig's and Brudzinski's signs may be found, provided the symptoms of meningeal irritation are not masked by those of mechanical pressure. Fever and leucocytosis occur in nearly all the severe cases, presumably as a result of absorption of blood by the serous membranes of the meninges. If the patient lives through the first shock, the clinical picture varies, due to the balancing of the factors of intracranial pressure and meningeal irritation.

Symonds[3] has differentiated four clinical groupings:

1. A sudden large hemorrhage causing such immediate and gross increase of pressure that coma and death ensue within a few hours. (Case 3.)
2. A sudden and gross hemorrhage which is checked. The patient then passes from a state of coma to one of mental confusion with subsequent headaches. (Cases 1, 2 and 4.) This may lead to recovery or death may occur from subsequent hemorrhage.
3. A sudden slow hemorrhage of a mild character which causes an abrupt onset of headache and vomiting; if progressive, this may lead to mental confusion, coma and death; if checked, it may be followed by recovery at any stage of the illness.
4. A slow leakage, as from a vein, may give rise to the gradual onset of headache and vomiting; if progressive, it may lead to mental confusion, coma and death; if checked, it may result in recovery at any stage of the illness.

Laboratory: The spinal fluid is generally under increased pressure. When removed in several tubes it is equally bloody in each and on standing no coagulum is formed. The supernatant portion of the fluid after centrifugalization is often yellow. If the supernatant fluid is xanthochromic, it indicates that the blood has been in contact with the fluid sufficiently long for hemolysis to occur. The homogeneity of the fluid differentiates it from the bloody fluid sometimes obtained as a result of trauma to a vessel during the course of the puncture. In this latter instance each successive tube withdrawn is less bloody and there is a tendency to the formation of a coagulum. The supernatant fluid should always be clear.

A large amount of albumin may be present in the urine for several days after the hemorrhage but it usually clears up completely in a short while. The name "massive albuminuria" has been given to this phenomenon and it is considered by some a good diagnostic sign when present. There has been much discussion of its causation. Symonds[3] concludes that there is good physiological evidence supporting the view that it may be due to a disturb-

ance of the nerve centers concerned with renal secretion. However, definite proof is lacking that the kidneys themselves may not be temporarily or permanently damaged. Glycosuria has been reported in some cases and may also be due to a medullary disturbance.

Diagnosis

The finding of the characteristic spinal fluid in cases where the onset is sudden and not traumatic and in which no permanent paralyses ensue justifies a presumptive diagnosis of spontaneous subarachnoid hemorrhage. It is important to differentiate extradural hemorrhage and subdural hematoma since these conditions are often best treated surgically. Extradural hemorrhage is nearly always traumatic and unless the dura is broken the blood does not enter the subarachnoid space. Subdural hematoma is generally a more chronic condition. Localizing signs are more likely to occur in these than in spontaneous subarachnoid hemorrhage.

Intracerebral hemorrhage may rupture from the cortex into the subarachnoid space or it may break into the ventricle and thence emerge into the spinal fluid; but when such hemorrhage is sufficiently extensive to be confusing, death or permanent paralyses ensue. The youth of the patient and the lack of arteriosclerosis or hypertension are often helpful in excluding the probability of an intracerebral lesion. Some rapidly fatal cases of spontaneous subarachnoid hemorrhage can be conclusively differentiated only by a careful necropsy examination.

Prognosis

The prognosis is always grave but depends to some extent on the etiology. It seems more favorable in the congenital anomalies. If the patient survives the initial shock of the hemorrhage, recovery even from focal symptoms may be complete but sequelae from meningeal adhesions sometimes occur. The possibility of recurrence is always to be considered.

Treatment

The control of intracranial pressure and the removal of the irritating blood are the logical aims of treatment. Fortunately, both of these can often be attained by spinal puncture which must be done very cautiously because further hemorrhage has been attributed to relieving the pressure too suddenly. Symonds[3] recommends that during the early stage, while the hemorrhage is progressive, therapeutic lumbar puncture should be used only to control a dangerous rise of intracranial pressure. During the later stage when meningeal symptoms predominate, repeated lumbar punctures may be carefully done but it seems advisable not to reduce the spinal fluid pressure below 100 mms. of water. Kennedy and Wortis[10] have recently advocated elevation of the head fifteen to forty-five degrees, administration of large doses of caffeine and hypertonic glucose enemas as medical measures to control intracranial pressure. Magnesium sulphate enemas and intravenous hypertonic glucose solution are also sometimes helpful. Recent work indicates that intrathecal injections of air following drainage may be beneficial. Intraspinal injection of coagulants has been tried but it is of doubtful benefit and not without danger. Subtemporal decompression occasionally becomes imperative. In surviving cases prolonged convalescence with continuous avoidance of physical strain is advisable.

Report of Cases

Case 1. A twenty-seven year old law student was rolled into the office in a wheel chair at 9:00 A. M., October 6, 1927. He was entirely irrational, disoriented and vomiting profusely. He had no fever and since he was known to have indulged in alcoholic sprees, it was thought that he was drunk, so he was sent home in a car to be put to bed. He was seen again at 6:30 P. M. because he was still in a coma. At this time the history was pieced together that he had arisen sober at the usual hour and had walked to class with a friend. Suddenly he had asked that a car be called to take him to the hospital "because he felt so dizzy that he could not stand up without holding on to something." On arriving at the hospital he had stepped into the wheel chair and the friend went back to his class. A few minutes later he was in the state described above.

When seen at 6:30 P. M. he was in a complete coma and had a temperature of 101.8° (rectal). There was a slight nystagmus, general flaccidity without paralysis, stiff neck, bilateral Babinski's sign and a suggestive Kernig's sign. The fundi could not be examined because the pupils were too contracted. The leucocyte count was 32,000 and there was a trace of albumin in the urine which was otherwise normal. The spinal fluid was under more

than 350 mm. pressure and was homogeneously bloody. Twenty c.c. were removed. This fluid, after centrifugalization, was perfectly clear. Both blood and spinal fluid Wassermanns were negative.

The patient became incontinent of both urine and feces during the night. The next morning he could be aroused and the signs of meningeal irritation had disappeared. That afternoon another puncture showed the spinal fluid under 180 mm. pressure. Red and white cell counts on this fluid indicated that by comparison with the cell counts of the blood, there was an approximate increase of 1,500 white cells per cmm. of spinal fluid. The patient was slightly better and although babbling almost incoherently, he could complain of headache and he was able to recall his college address correctly.

On the fourth day of the illness 10 c.c. of a less bloody fluid were removed and on the sixth day, 15 c.c. were taken off. On the twelfth day an additional 15 c.c. were drained; this was almost clear but rather straw-colored. During the next two weeks improvement was slow but he could recognize his friends and at times appeared entirely rational. He was allowed to get up at the sixth week and seemed completely himself. He was discharged on the first of December, eight weeks after onset, apparently as well as ever. He was thoroughly examined one year later and no evidence of any permanent effects of his illness was found. His urinalysis was normal at this time. He has now been practicing law for three years without any further difficulty.

The patient had had several operations in his infancy for plastic repairs of congenital defects and careful search of his peripheral arteries revealed an aneurysmal dilatation of his right radial artery. This led us to the assumption that the subarachnoid bleeding had come from a congenital cerebral vascular anomaly.

Case 2. A fifty-six year old white housewife was admitted to the hospital at 4:00 P. M., September 20, 1929. On the preceding day she seemed to have felt as well as usual and at bedtime she had had no complaints. At 5:00 A. M., eleven hours before admission, the patient arose to go to the bathroom and fell. Her daughter found her unconscious and summoned a physician, who found no paralyses but discovered that her neck was stiff. Although the patient had no fever at this time her leucocyte count was 20,000. A consultant was called who agreed that the patient probably had meningitis. During the day she vomited frequently but her mental state improved and she complained of a very severe occipital headache.

Admission physical examination showed a sleepy, semi-comatose woman who was fairly well oriented when aroused and complained only of a violent occipital headache. She talked little but could understand. There were no muscular paralyses. The neck was very stiff. The pupillary reflexes were sluggish and the right eye focused poorly. No edema of the optic discs was present. The heart, lungs, and abdomen were negative. The blood pressure was 150 systolic and 90 diastolic. Reflexes of the extremities were normal.

A lumbar puncture was immediately performed and a normal initial pressure was found. Fifteen c.c. of homogeneously red fluid were removed. Following this the headache was less and the patient became more rational. Two days later she became restless and again complained of intense pain in the neck with some nausea. The blood pressure had risen to 180 systolic and 110 diastolic but otherwise the examination was unchanged. Twenty c.c. of spinal fluid were removed. The pressure and character of the fluid were as before. The patient's improvement was gradual until discharge on October 12th, three weeks after onset, at which time she was fairly comfortable. Her maximum temperature in the hospital had been 101.2° (rectal); the highest leucocyte count 16,000. A very slight trace of albumin was present in the first urinalysis but subsequently it disappeared entirely. Both blood and spinal fluid Wassermanns were negative.

This patient has been followed at frequent intervals for the past two years and she has survived a severe attack of pneumonia during this time. She was known to have had a normal blood pressure before her hemorrhage but since that time she has had an average systolic pressure of 200 mm. Hg. with a diastolic pressure usually about 120 mm. Hg. The cause of the hemorrhage in this case is obscure. The patients' age would favor arteriosclerosis and hypertension as factors but there was no demonstable evidence of either at the onset of the

illness. A congenital vascular anomaly seems not improbable.

Case 3. A twenty-two year old medical student was brought to the hospital at 5:30 P. M., April 15, 1930. One month previously he had received treatment for a broken nose and facial contusions but he had apparently made a complete recovery. On the afternoon of his admission he had gone to the gymnasium for his usual exercise and while skipping rope he had collapsed and had been brought immediately to the Hospital in an unconscious state.

When first seen the most striking feature was his acute respiratory failure, manifested by a respiratory rate of three per minute and extreme cyanosis especially of the arms, face and chest. Artificial respiration and large intravenous doses of caffeine and adrenalin were given at once. Within five minutes the breathing had increased to fifteen and the cyanosis had almost disappeared but large bubbling rales were still present over both lungs and there was no sign of consciousness. Full examination about an hour after onset revealed sluggish pupillary and corneal reflexes. It was thought that there was slight but definite bilateral edema of the optic discs. Small areas of retinal hemorrhage were seen on the left. Deep reflexes on the right were slightly hyperactive. The blood pressure was 135 systolic, 90 diastolic. A diagnosis of intracranial hemorrhage was made and 60 c.c. of 50 per cent glucose solution was given intravenously without improvement. The advisability of lumbar puncture was considered but it was thought unsafe. A left subtemporal decompression by Dr. E. P. Lehman revealed a tremendously increased intracranial tension and a thin layer of subarachnoid blood over the exposed surface of the brain. Closure was made with difficulty. The patient developed pulmonary edema and died of respiratory failure at 11:30 P. M., six hours after onset. During the agonal phase the temperature rose to 102.6° (rectal), the blood pressure to 180 systolic, respiration to 30, and the pulse to 164.

Necropsy the following morning was confined to the cranial contents. A film of blood was present over the entire surface of the brain and the subarachnoid fluid was very bloody. A careful search for organization of blood-clot or other evidence of old cerebral injury was made on account of the history of possible intracranial damage one month previously but nothing was found to indicate this. The brain has been studied grossly and microscopically by Dr. Charles Bagley, Jr., of Baltimore, whose previous work[7-9] on the pathologic changes in similar cases has done much to increase our knowledge of the subject. He has been good enough to furnish the following brief description with a photomicrograph:

"The specimen was examined after fixation in formalin and the entire surface was blood stained. The blood was diffused through the pia-arachnoid mesh, in greater quantity at the base. Blocks from various parts of the cortex showed nothing abnormal further than the presence of the blood. The entire base was studied in sections from a point anterior to the chiasm to the interpeduncular space.

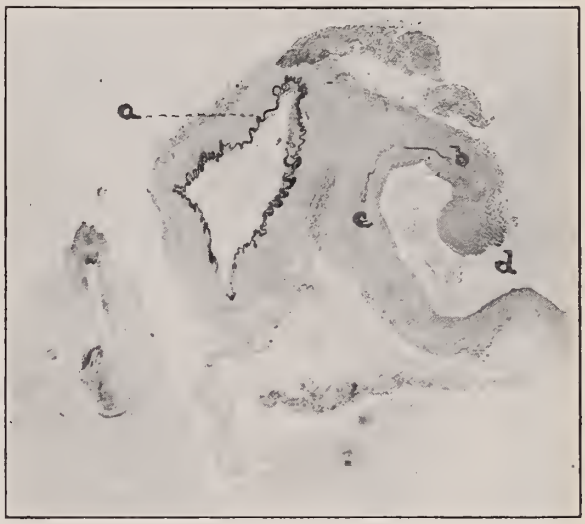

Figure I.

Photomicrograph from brain-section in Case 3, showing posterior communicating artery (a) with well defined elastic tissue layer. To this is attached the abnormal branch with a very small amount of elastic tissue extending from (b) to (c). The outer portion of this vessel is ragged and torn, (d) marking the actual point of the rupture.

(Courtesy of Dr. Charles Bagley, Jr.)

"In one of the blocks taken from this area a branch of the left communicating artery was found to be dilated and ruptured. The wall of this branch shown in Figure I varied greatly in thickness and its elastic tissue layer was almost entirely lacking. In the figure the vessel is shown at a point where it is still attached to the communicating artery. The great contrast between the two vessels is shown most strikingly in the difference in the elastic tissue layer and in the rupture of the wall of the diseased vessel."

Case 4. A fourteen year old schoolboy was admitted on January 23, 1931. Two days previously he had awakened with a slight frontal headache which persisted throughout the morning. About midday, following a brief period of amnesia, he suddenly collapsed in a coma. He was seen almost at once by the school physician who was impressed with his extreme respiratory distress evidenced by gasping for breath and slow spasmodic breathing. Death seemed imminent. The patient was put to bed and given strychnine hypodermically. When he was seen a few hours later by a consultant he was still comatose with a respiratory rate of 50 per minute. Cyanosis of the lips and extremities was obvious. The pupils reacted sluggishly to light and the conjunctival reflex was almost gone. Numerous bubbling rales were heard throughout both lungs and the patient had coughed up some blood-tinged serous fluid. The heart was heard with difficulty but seemed normal. The pulse rate was 80. The patella reflexes could not be satisfactorily obtained. The consultant made a diagnosis of pulmonary edema and administered adrenalin. He advised complete rest until the patient was in better condition for transportation. During the next two days the patient vomited several times but his respiratory and mental symptoms improved.

He was sent to the hospital two days after the onset. At this time he seemed fairly well oriented but looked very uncomfortable. He complained of a violent headache. There was a slight but very definite stiffness of the neck and spine and a vague suggestion of a positive Kernig's and Brudzinski's signs. The other reflexes were normal and there was no evidence of paralysis. The fundi appeared normal. X-rays of the skull were essentially negative. The white count was 13,600 but there was no albuminuria. The temperature by rectum fluctuated between 100.8° and 102.2°.

On the fourth day of the illness a lumbar puncture was done. The fluid was under more than 350 mm. pressure and was homogeneously bloody. The supernatant fluid after centrifugalization was definitely yellow. Only 5 c.c. of fluid were taken off at this time because the patient complained of a "funny sensation in his head." The blood and spinal fluid Wassermanns were negative. His condition was unchanged for the following six days during which time he required narcotics for the control of his headache. On the ninth day another puncture was done and the initial pressure was 280 mm. Twenty-five c.c. of fluid were removed and the final pressure reading was 105 mm. After this the patient was very much better and had no further headache. He continued to improve until discharged on February 17th, four weeks after onset, at which time physical and neurological examinations were normal. During the past seven months he has been entirely well.

The question arose whether the illness might have been the result of a cranial injury since the patient had been subjected to more than his share of rough treatment at school. Careful inquiry, however, failed to substantiate this theory and the patient's account of the onset definitely indicated that he was in a state of amnesia for some minutes before falling.

Summary

Spontaneous subarachnoid hemorrhage is apparently not a rarity although it has been neglected in American literature until recent years. It may occur at any age and is relatively common in young people. There are many possible causes for its occurrence but a congenital cerebral vascular anomaly is probably responsible for more cases than any other single cause. Its onset is usually very abrupt. The symptoms are those of a combination of mechanical pressure and meningeal irritation. A homogeneously bloody spinal fluid is always present. The immediate prognosis is grave and recurrences are not uncommon. The treatment consists of controlling the intracranial pressure and removing the irritating fluid when necessary.

Of the four cases presented, a definite etiological diagnosis of a congenital vascular anomaly was established by necropsy in the only fatal case (Case 3). This diagnosis seems most probable in two others (Cases 1 and 4) and in the remaining one (Case 2) it may well have been the cause. All four cases were characterized by the abrupt onset of coma in otherwise healthy persons, three of whom (Cases 1, 3 and 4) were under thirty. Headache, mental confusion and signs of meningeal irritation occurred in all those surviving (Cases 1, 2 and 4). In three instances (Cases 1, 2 and 3) evidence of increased intracranial pressure was obtained. Two (Cases 3 and 4) suffered from respiratory failure presumably due to a medullary compression. All the spinal

fluids were homogeneously bloody and fever was a constant finding. Leucocytosis was present in the three cases (Cases 1, 2 and 4) where a white count was done and albuminuria, transient in character, was demonstrated in the two cases (Cases 1 and 2) where a urinalysis was performed within twenty-four hours after onset. There was no glycosuria in this series. Evidence of syphilis was lacking in all four. Therapeutic lumbar puncture apparently gave definite relief from meningeal symptoms in the three (Cases 1, 2 and 4) where it was used. Caffeine seemed to relieve the respiratory failure of the fatal case. The three survivors (Cases 1, 2 and 4) are at present without signs or symptoms attributable to their illness.

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BACTERIAL ALLERGY AND CHRONIC ARTHRITIS.*

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The problem of therapy in chronic arthritis is rendered difficult in that in the last analysis we do not know its actual etiology and are therefore not yet in a position to remove the cause. This is, after all, the ultimate desideratum in the treatment of any disease.

Opinion is still divided as to whether arthritis is metabolic or infectious in origin. Furthermore, those who hold to an interaction of the two factors are not in agreement as to the preponderant value of the one or the other. Certainly metabolic factors do play a part. Pemberton and his colleagues[1-2] have observed delayed removal of sugar from the blood and diminished oxygen utilization in chronic arthritis. Sulphur metabolism appears to be altered. Cawadias[3] has observed an excessive loss of sulphur in the urine. Not infrequently the blood calcium is elevated.[4] The urine of persons with atrophic or rheumatoid arthritis is usually dilute, indicating a deficient concentrating capacity of the kidneys.[5] The frequent onset of rheumatism at or near the menopause is further evidence strongly suggestive of the action of metabolic factors. In this connection the thyroid and the gonads, particularly the ovaries, have received especial study.

The tendency of arthritis to run in families likewise suggests a metabolic factor, but against this it has been pointed out[6] that as a rule children of arthritic parents are brought up in an identical environment, which is often auspicious to the development of the disease.

The situation is further complicated by the fact that aside from the specific arthritides there are at least two forms of chronic arthritis: atrophic (called rheumatoid arthritis in England), and hypertrophic arthritis (called osteoarthritis in England). Often the two appear in the same individual. The former usually appears earlier in life. It is more likely to involve the smaller joints, and is usually thought of as infectious. The latter occurs later in life, is more likely to involve the larger joints, is less disabling and is considered by many to be primarily metabolic or traumatic.[25] There are decided differences in the gross and microscopic pathology of the two forms, but there are at the same time many points of pathological identity and some authorities, such as McCrae[7] and Crowe,[8] believe that they are but different manifestations of a basic underlying pathological state.

The idea of an infectious factor in the causation of chronic arthritis received great impetus with our understanding of focal infection, and the occasional spectacular relief following the removal of such foci. Bacteriologic investigations of this chronic disease have to an extent paralleled those that have been made in the more acute rheumatic fever. These investigations have developed many points of analogy between rheumatic fever and chronic arthritis and have led many to believe that the basic underlying process, if not the actual

*Read before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, October 6-8, 1931.

etiologic agent, is identical in the two. In both, however, the search for a single specific etiologic bacterium has so far been surprisingly fruitless. Attention has centered increasingly around the streptococcus. Specific streptococci, such as Poynton and Paine's diplococcus rheumaticus,[9] Small's streptococcus cardioarthritidis,[10] Crowe's streptococcus rheumaticus,[8] and Birkhaug's non-methaemoglobin-forming streptococcus[11] have been proposed as the specific agent.

It beomes at once apparent that if these different streptococci are not identical, either they cannot all be the causes of rheumatism or else rheumatism may be caused by a variety of streptococci. The streptococcus found most frequently in conjunction with rheumatic fever belongs to the viridans group. But, even so, it is not constantly present. Swift and Kinsella[12] recovered nonhemolytic streptococci from the blood in less than ten per cent of their rheumatic cases. Although Clawson isolated streptococcus viridans from all of twenty cases, he found them not to be immunologically identical. Cecil, Nichols and Stainsby[14] obtained streptococcus viridans, streptococcus hemolyticus and streptococcus anhemolyticus, all, from the blood of patients with rheumatic fever. Observations such as these have been the basis for the multiple streptococcal theory of acute rheumatism. Apparently a variety of immunologically different streptococci may be responsible for the clinical picture.

An explanation for the similarity in the clinical response, in spite of multiple streptococcal etiology, was soon made available by the work of Swift and his collaborators[15] on allergy to the streptococcus in rheumatic fever.

Derick, Andrews and Swift[16] produced a state of hypersensitiveness in rabbits by means of focal streptococcal lesions, a state which was demonstrated by positive intracutaneous sensitization reactions. Dochez and Stevens,[17] also Birkhaug,[18] confirmed this work and further showed that hypersensitiveness, which is at first specific for the infecting organisms, later becomes more general, so that one will react to different types of the same germ. This would suggest the possibility that once one has become rheumatic, due to sensitization to a single strain of streptococcus, other strains may be responsible for continuation of the symptoms.

Swift and his collaborators also showed that clinically many rheumatic patients give positive skin reactions to filtrates of certain strains of streptococcus viridans.[15] Apparently positive skin reactions in rheumatic patients depend more on a state of hypersensitiveness to certain products of streptococci than on the specificity of any one type of streptococcus. A focus of infection in a rheumatic individual becomes an area where the allergizing substance is produced, and whence it spreads to sensitize the different tissues. This is more likely the basic process at work than that of the older theory, that the focus serves as a point from which organisms are disseminated throughout the body. This would explain the very frequent failure to isolate viable organisms from the joints themselves.

In chronic arthritis, as in acute arthritis, the streptococcus appears to be the offending organism. Both viridans and hemolyticus have been isolated from the joints, the lymph nodes, and the blood.[6]

The idea that chronic arthritis, like acute rheumatism, is associated with allergy to the invading microorganism, even though the bacterium itself be also present in the joint, has been stressed especially by Small,[19] in this country, and by Crowe,[8] in England.

Report of Studies

Since in the last analysis proof or disproof of the theory will depend upon the results of clinical investigation, we have, during the last four years been studying the results of bacterial desensitization in a series of patients with chronic arthritis. Both atrophic and hypertrophic arthritis are represented, roughly in the proportion of four to one. So that we might evaluate the results of vaccine treatment, this has been almost exclusively the only therapy administered. Occasionally, in the absence of relief, we have employed other measures, but in the compiling of our statistics such cases have been recorded as poor result cases. With certain modifications, we have followed the procedure developed by Crowe. In general, the principle and plan has been as follows:

Except in very early cases no special attempt was made to clear up foci of infection. In a large proportion such attempts had already been made without relief. In any event it is usually impossible to clear up every focus. Cecil and Archer[20] have observed that where an arthritis is of longer than one year's dura-

tion, such therapy is less likely to be productive of relief, and Pemberton and Pierce[21] have observed that in cases of chronic arthritis in which local foci were present the number of recoveries was three times greater when the foci were allowed to remain than when they were treated. Furthermore, such a procedure would have left us unable to determine the value of vaccine treatment.

The vaccines used were made from the organisms cultured from the feces, following the Solis-Cohen selective pathogen technic. Crowe has remarked that after a focal infection has become sufficiently established to produce chronic arthritis, the same organisms are usually also present in the colon.

The intestinal tract has always received especial attention in studies of the etiology of rheumatism. It has been shown that diminished acidity in the upper gut diminishes the disinfecting power of the upper intestinal tract. Arnold and Brody[22] have observed experimentally that sudden atmospheric changes (high temperature and humidity) inhibit the bactericidal action of the intestines. These investigators introduced cultures of B. prodigiosus, B. coli and B. typhosus into the duodenum, together with an alkaline solution and protein (eggwhite), and observed that within from five to thirty minutes the lymph in the thoracic duct contained from 500 to 1,000 bacteria per c.c. These observations strongly suggest that gastrointestinal disturbances and meteorological changes may increase bacterial absorption from the intestines. Keating[23] has found hemolytic or nonhemolytic streptococci in the stools of ninety-five per cent of his chronic arthritics as contrasted with ten per cent among nonarthritics.

Vaccines Used

Our vaccines have been of three different types. By preference we have used an autogenous fecal vaccine which we have termed enteropathogen. When this has failed to give desired results we have had recourse to a pooled enteropathogen, consisting of a mixture of those various autogenous pathogens which we have found to give best results in other cases. Our third vaccine has been Crowe's stock or pooled vaccine which contains the streptococci and staphylococci which he has isolated from individual cases. It represents 155 varieties of streptococci and two of staphylococci. On the whole we have obtained better results from our autogenous vaccines, but when these have failed one or the other of the two alternative vaccines has sometimes given relief.

The technic of administration has been based on the assumption that we are dealing with bacterial allergy rather than with bacterial immunity, and the dosage has been analogous to that employed in desensitization to pollens and to allergens.

I believe that much of the failure from vaccine therapy in arthritis and other allergic diseases has been due to a failure to recognize the difference between desensitization and immunization, and the consequent use of excessive dosage.[24] Our doses have always been minute, and as soon as improvement has become manifest the size of the dose is never increased, as long as improvement continues.

Dosage

The criteria of dosage have followed those laid down by Crowe. An arbitrary small first dose is given. If within the next twenty-four or forty-eight hours the patient feels better, the dose is probably correct and should be maintained comparatively steady. If during this same interval the arthritic symptoms become worse, the dose was too large and should be reduced. If there was neither response nor reaction, assuming that we have the proper organism in the vaccine, the probability is that the dose was too small and it is stepped up accordingly.

Treatments are given at intervals of four, seven or ten days, depending upon response and must be kept up for many months. The exact duration of treatment for best results is still uncertain.

Results

We have recently concluded a follow-up survey on our first hundred cases so treated, extending over a period from 1926 to 1929. We had thought that these cases had gone a sufficiently long period to justify statistical study. We find that of these, ten per cent were relieved of symptoms, probably best called quiescent or arrested; thirty-seven per cent were very much improved; twenty-five per cent were benefited somewhat but not sufficiently to be called satisfactory; and the remainder were not benefited. Thus, we find that forty-seven per cent were sufficiently relieved to be well satisfied with the treatment. When we consider the chronicity of arthritis,

its tendency to relapse and the failure of the usual methods of treatment to give more than evanescent symptomatic relief, these figures assume real significance. They are not quite as good as those of Crowe, who reports good results in sixty-eight per cent, and this leads to hope that our results can be still further improved.

The difficulty with judging results following any method of treatment is that apparently equally good results may be obtained by entirely different methods.

Thus, Pierce reported success in seventy-one per cent of his arthritics by restriction of the diet together with general treatment, while Hall obtained nearly as good results (sixty-six per cent), by giving a generous diet together with general treatment.[6] But, here, the common denominator is the general treatment and the obvious conclusion should be that the dietary regimen is of secondary importance. In our series, without exception, there has been no general treatment such as physiotherapy, baths and the like, so that, after discounting the psychic factor, what improvement there has been can be attributed only to the vaccine. Our estimate of the degree of relief has always been the patient's own estimate rather than ours, and we have allowed sufficient time for the patient's enthusiasm in a new procedure to have worn off.

It seems entirely reasonable to assume that a combination of the allergic treatment with other recognized general measures would materially increase the benefit gained; but for this study such a combination would have discredited our conclusions. However, in the practical treatment of the patient with chronic arthritis, the logical procedure should be a combination of specific bacterial desensitization, with general therapeutic measures such as low carbohydrate diet, vitamin B feeding, intestinal cleansing and physiotherapy. We cannot lose sight of the fact that infection is undoubtedly but one of several factors which interact in the production of the arthritic constitution.

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Discussion

Dr. _____: Infectious arthritis has rather interested me lately. If I might add a word, I should like to say that in these cases that do not seem to react to vaccines, foreign proteins, etc., I have had a series of transfusions give the desired pick-up to some of these cases.

Dr. Russell L. Cecil (*invited guest*), *New York City:* I was very much interested in Dr. Vaughan's paper. I think he is presenting a new point of view and one that we are all anxious to hear about. This whole question of allergy, of course, has been much discussed in relation to tuberculosis and in relation to arthritis. I believe bacterial allergy plays an important part in the pathogenesis of rheumatoid arthritis. I cannot accept the theory that arthritis is a metabolic disease, and I doubt if you will find many medical authorities who will say it is a metabolic disease. I doubt if you will find a professor of medicine or a pathologist or a bacteriologist that will say rheumatoid arthritis is a disease of metabolism. Many will say it is an infectious disease, and some will not say anything. I think nearly all students of arthritis, certainly in this country and in Germany and England, consider it an infectious disease. What causes arthritis in pneumonia? The pneumococcus when it gets into the joint. Why deny this privilege to streptococci? By analogy it seems perfectly possible.

Dr. Vaughan, closing the discussion: I want to thank Dr. Cecil for entering into the discussion. Because Dr. Cecil had covered the subject of etiology in the paper which he has just read, I omitted reading that portion of my paper dealing with infection as the probable cause of atrophic arthritis.

The one person I think of particularly who stresses

the importance of metabolic factors in both forms of arthritis is Dr. Pemberton. Dr. Pemberton, in his monograph, does not commit himself for or against infection. He discusses the work of Rosenow and Russell Headen, particularly in the earlier part of the monograph and then drops the subject. Isn't that right, Dr. Cecil?

DR. CECIL: I think so.

ABDOMINAL DRAINAGE.*

SOUTHGATE LEIGH, M. D., F. A. C. S., Norfolk, Va.

Can the formation of intestinal adhesions be materially delayed? We believe it can.

The generally accepted opinion among surgeons is that "shutting off" adhesions will form in a few hours around any drainage material placed in the abdominal cavity and that free drainage will automatically cease in a short time.

We believe that we have succeeded in keeping up such drainage for a considerable length of time, probably as long as five days. Having had repeated demonstrations of this prolonged drainage and appreciating the practically unanimous opposite opinion of the profession, we have had the literature searched by the American Medical Association, American College of Surgeons, and W. F. Prior and Company. We have been able to find only two authors who have written anything that has any bearing on the subject. They are Dr. J. R. Buchbinder, who in a series of experiments with animals made use of hypertonic dextrose solution to delay the formation of adhesions, and the other Dr. Harold M. Trusler, who uses amniotic fluid to prevent the formation of adhesions in abdominal surgery. I have corresponded with both of these gentlemen and find them much interested in the subject.

Dr. Buchbinder has conducted experiments with dogs and felt very hopeful. So far, however, he has not felt encouraged in using dextrose solution in human peritonitis. His investigations are being continued.

In the work of Dr. Trusler, his efforts have been exerted in the prevention of adhesions following operations. After reading a reprint which I sent him on the subject of abdominal drainage he wrote me as follows:

"I do know that following abdominal operations I employ intravenous fluids freely and at the slightest provocation. To this practice I give the credit for many spectacular recoveries. And I have personally noted the *free fluid drainage* which will follow such management of an abdominal suppuration. Concerning an effect on the prevention of adhesion formation, I have no specific data to offer but I certainly appreciate the soundness of your views.

"Some of my observations on the amniotic fluid product are interesting in this connection. In my attempts to determine the mechanism of its action I was always impressed that it acts, in part at least, by producing in the traumatized or contaminated peritoneum a fluid exudate which persists over several days time."

Dr. Trusler's letter is most encouraging in that it to some extent confirms my opinion as to the effect of adding fluid to the circulation and thus increasing the amount of drainage from the tubes. It is also interesting to note that a preparation made from amniotic fluid has been helpful in delaying the formation of adhesions following abdominal operations. It is to be hoped that it may be used effectively in suppurative cases.

I am frank to say that I have been rather surprised and shocked to find that so important a matter has not been given more attention by the profession in general. It rather reminds me of the opinion that prevailed, not so many years ago, that free pus in the abdominal cavity meant a fatality. Fortunately the profession did not so readily acquiesce in that opinion.

There are many cases of free pus in the peritoneal cavity, which needs draining out, and many of these cases have the pus so widely distributed that it is impossible to place drainage material at each infected spot.

If the "shutting off" adhesions of the intestines and other viscera can be delayed long enough, the pus may be induced by gravity and other means to run to the drainage tubes and be safely carried off.

The large majority of these cases are from appendicitis with rupture, occurring before limiting adhesions have formed. Wounds of the intestines and ruptured infected conditions may also cause pus in the free peritoneal cavity.

The Fowler position with the Murphy drip has been in general use for many years. A proper criticism of the former is that the drainage must be "up-hill." This objection can be overcome by placing the patient in the "elevated right side" position, so that if tubes

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are inserted into the lower abdomen and pelvis, the outer ends of these tubes will be "downhill." These tubes should be of rubber, soft enough to do no damage to the surrounding parts, and thick-walled enough to prevent collapse. They should also be sufficiently large.

The delaying of the formation of the "shutting off" adhesions is brought about by *overfilling the blood vessels of the abdomen and pelvis with fluid.* They can be so over-filled that the peritoneal surfaces will become excreting instead of absorbing surfaces.

This is done by getting fluid as rapidly into the rectum as will be absorbed, and, if necessary, giving fluid under the skin or into the vein.

This filling of the blood vessels must begin *promptly* either during or immediately after the operation, and be continued *without interruption*, as long as necessary.

Salt solution is probably the best preparation for both rectum and subcutaneously, while salt solution or glucose may be used in the vein.

In demonstration of the efficacy of the "elevated right side" position, we can mention cases where the dressings are kept continuously soaking wet by the discharge from the tubes, and yet when we change the gauze wicks in the tubes every twelve hours, and use suction for any fluid in the bottom of the tubes, there is no fluid found.

In confirmation of our claim that adhesions are delayed and that the peritoneal surfaces become excreting surfaces, we would say that there is in these cases an increase in the amount of the fluid discharging from the tubes for the first two or three days and that the pus becomes gradually thinner.

We have now had over a hundred of these cases and, with the exception of four moribund cases, we have been able to obtain safe results. If any of our auditors are good enough to try the method, we would be grateful for a report as to the results.

Sarah Leigh Hospital.

SOME FACTORS IN THE ETIOLOGY OF VASCULAR HYPERTENSION.*

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When the subject of this symposium, vascular hypertension, was mentioned in the presence of an experienced, active clinician, his remark was: "What can be done for it when recognized?" Admitting the relative truth of his pessimistic observation, the fact that so little is known regarding its cause, pathology and treatment should prove an incentive to further study. Those of us who have had no special training and opportunity for research work can exchange profitably clinical impressions and observations about a malady so prevalent. Research work in this field, as in others, is indispensable, but theories and laboratory investigations not reinforced by clinical experience are usually unproductive of practical results.

We occasionally hear statements made that hypertension is a modern disease—a product of the strenuous civilization in which we live. The observation is doubtless incorrect. The sphygmomanometer is comparatively a new instrument, but early medical history describes symptoms and signs found in nephritis, arterial thickening, cardiac changes and apoplexy which, then as now, must have been associated frequently with blood pressure elevations.

The etiology of hypertension is not known. My purpose will be to discuss briefly some of the factors currently regarded as contributory, directly or ultimately. The voluminous literature dealing with the subject renders a bibliographic review impossible in this paper.

Races:—High blood pressure does not appear to be a characteristic of the Anglo-Saxon peoples exclusively. Gentile, Jew, Slav, Gallic and Latin have it in common. No records are available of savages, but hypertension is found infrequently in the Chinese and other Orientals. It probably reflects the stoical temperament of those races. Conversely, it is significant that people of less stable dispositions show a much higher incidence of hypertension. Probably the enervating temperature and barometric conditions of tropical countries favor relaxation of the vasomotor system.

Occupation:—It has long been observed that certain vocations are conducive to the development of increased blood pressure. Osler called attention to the influence of prolonged muscular effort. Doubtless the temporary compensatory increase of vascular tension incident to violent physical exertion, if continued as a daily feature of one's work, may result in permanent changes in the arterial tree and cardiac muscle.

*Read by invitation as part of a symposium on Vascular Hypertension before the Clinch Valley Medical Society, Gate City, Va., September 30, 1931.

On the other hand, a sedentary life, particularly in those who have been active previously, oftentimes results in obesity with its frequently associated cardio-vascular-renal changes and hypertension. This is illustrated in the experience of many famed athletes after increasing years have enforced an abandonment of active daily exercises.

Painters, typesetters and other workers in lead are prone to gradual arterio-sclerosis and elevation of pressure. The daily absorption of small amounts of the metal apparently causes metabolic changes resulting in nephritis, gout, etc.

Focal Infections:—Possibly undue emphasis has been ascribed during the past two decades to isolated foci of infection in the etiology of many diseases. All of us have encountered numerous instances where teeth have been radically extracted, tonsils enucleated, and nasal sinuses operated without sufficient provocation and with clinical results disappointing to both patient and physician. A causal relationship between focal infection and high blood pressure has not been proved. Yet, there is general recognition of the beneficial effects frequently resulting from the complete eradication of definite foci of infection in arresting and ameliorating certain hypertensive states. Too often the clinical results are minimized because of a failure to effect a complete "house-cleaning" when more than one compartment is involved with bacterial debris. It is confidently believed that the more generally practiced examination of school children, and the correction of such focal lesions, will result in a reduced incidence of the states conducive to hypertension.

Diet:—Habitual over-eating with resulting abnormalities of metabolism, especially in the obese, is regarded as an important contributing factor in high blood pressure. So general is this opinion held that we recognize the potential subject of apoplexy and cardiac dilatation in the fat, plethoric gourmand seen in public dining rooms. Medical directors of life insurance companies are impressed with the frequent association of obesity and hypertensive changes in adults at, and beyond, middle life. Such applicants for insurance pay dearly for their intemperance, not only in settlement of the dinner check, but in increased insurance premiums. Unfortunately, in such matters, the physician's mandates are frequently as ineffective as legislative enactments affecting personal habits.

Various types of food have been the subject of much controversy in this connection. Proteins especially have been thought to be a factor in elevated blood pressure. The arguments supporting such a relationship are not convincing, provided the kidneys are able to eliminate satisfactorily urea and other ashes of protein metabolism. Carnivorous animals and races like the Eskimos, whose diets consist chiefly of meats, are not recognized as frequent victims of hypertension. Recent experimental tests made by Arctic explorers in living for months on a diet almost exclusively protein failed to reveal evidences of vascular and renal lesions—found by Newburg in animals experimentally fed high protein diets.

Sodium chloride is believed by some to be responsible indirectly for such changes, but, again, proof is lacking in individuals whose kidneys readily eliminate the salt.

The body's water intake has been subjected to interesting experimental and clinical study. Water "intoxication" has been shown to increase the blood volume and in certain conditions, such as diabetes insipidus, occasionally may cause vascular hypertension and convulsions. In patients with chronic nephritis, especially with edema and hypertension, excessive amounts of water are definitely injurious. Ordinarily in health the harmful possibilities are negligible since the kidneys and other emunctory organs maintain a safe water balance.

Alcohol, also, has been thought an etiological factor, not only in hepatic cirrhosis, but possibly in nephritis and hypertension. Its role in the latter conditions remains open to question.

Blood pressure determinations made on a large number of tobacco smokers showed a transient rise of about 5 m.m. of mercury when a cigarette was smoked. Excessive use of tobacco is thought to be a possible factor in initiating certain types of cardiac angina and obliterative endarteritis.

Metabolic Disorders:—Much attention has been directed in recent years to the endocrine system in its relation to blood pressure disturbances. We are familiar with the hypotensive changes expected in Addison's disease and myxedema. Thyrotoxicosis, especially the exophthalmic type, is usually associated with an

elevated systolic pressure and a normal, or low diastolic level. The subcutaneous or intravenous injection of epinephrin stimulates the vaso-constrictors with a temporary elevation of pressure. Possibly the thyroid hormone produces a similar effect on the sympathetic system.

The frequently encountered hypertension in women of menopausal age has been investigated extensively. With the waning ovarian function, it appears that antagonistic, or controlling, hormones of other ductless glands may be responsible for vaso-motor abnormalities, including high blood pressure.

Sir Humphry Rolleston states: "Chronic inefficiency of the liver to deal with the metabolism of proteins has naturally been assumed to be a cause of high blood pressure, and Sir Clifford Allbutt, in his posthumous work on arteriosclerosis (1925), accepted the possibility of the formation, or imperfect destruction, of a pressor amine. Guanidine* compounds and more recently a pressor hormone isolated from the posterior lobe of the pituitary gland have their advocates.

These and other metabolic disturbances are regarded by many as potential factors in the so-called "essential hypertension." In the absence of cardiorenal changes and arterio-sclerosis it is believed that the peripheral arterial tree (arterioles) are maintained in a state of more or less constant contraction by a pressor substance probably endogenous in origin. If this be true, the increased resistance offered to the column of blood during ventricular systole, and the diminished relaxation of the vessel walls during diastole, plausibly explains this interesting clinical phenomenon. Many of these patients however, in later years show definite evidence of nephritis, arterio-sclerosis and cardiac hypertrophy.

Psychic States:—The increased incidence of hypertension in several generations of certain families has given the impression that heredity exercises a direct etiologic role.† However, it seems probable that the environmental influences prevailing in the home and the characteristic temperament of one or both hypertensive parents may be an even more important factor in the frequency of familial high blood pressure.

The type of individual in whom hypertension either exists, or seems probable in the future, is fairly well recognized. The intensive, over-conscientious boy or girl, systematic even in inconsequential matters; the young adult who has early acquired the habits of thought and conduct of the middle aged, and the individual who has attained "success" at the expense of relaxation and play—these constitute a large percentage of patients with vascular changes.

Nephritis and Arterio-sclerosis:—Until recent years the term "high blood pressure" was usually regarded as synonymous with Bright's disease and atheromatous changes in the vessel walls. All of us, however, have observed certain patients with definite hypertension over a period of years whose kidneys and arteries apparently have remained uninvolved. Conversely, others are encountered frequently with advanced sclerosis of kidneys and blood vessels with no increase of blood pressure. The unknown factor, or factors, in such clinical equations has so far escaped solution. Yet, it is obvious that chronic nephritis and arterio-sclerosis are important etiologically in elevated blood pressure, or else the hypertension is a frequent expression of the renal and vascular diseases. The distinction is not one of importance clinically. Emphasizing the relationship between nephritis and hypertension, MacLean states that "the prognosis in many cases of raised blood pressure is dependent to a great extent on the renal condition."

Transient hypertension at times is seen in patients with acute nephritis. Like the fever and albuminuria, the pressure usually declines with the disappearance of the edema and the subsidence of the inflammatory process. Moschcowitz and others believe that glomerulo-nephritis is not a disease limited to the kidneys, but "represents a generalized disease of the capillaries,—a capillaritis." He states that Müller, Wolheim and others have found definite changes in the base of the nail bed consisting in irregularity of outlines, swelling, tortuosity of the vessels, and retardation of blood flow.

The all too frequent complication of the later months of pregnancy constitutes an important group of hypertensive cases. The toxemia in such patients suffering with grave

*Major states: "Many patients with essential hypertension do not, as commonly stated, have a normal kidney function. They are unable to excrete normally two guanidine compounds,—methyl guanidine and creatinine.

Major and Weber found increased amounts of guanidine in 50 observations on patients suffering from arterial hypertension, including 6 cases of frank nephritis.

†Osler is credited with the statement that such patients apparently are born with defective "tubing" (arteries).

renal disturbances is not definitely known. The condition is something more than an acute nephritis. The elevated blood pressure, edema and abnormal urinary findings usually disappear promptly after delivery. Occasionally the kidney pathology and increased arterial tension continue after the puerperium.

A consideration of the probable causes of chronic nephritis and arterio-sclerosis necessarily includes the factors, already briefly discussed, contributing to vascular hypertension.

Some cases of chronic Bright's disease can be traced to a preceding acute nephritis which recovered only in part and passed into the subacute and permanent types. In such instances, an active focal, or an acute systemic, infection should be borne in mind.

The sclerotic manifestations of tertiary syphilis, especially common in the proximal portion of the aorta, the aortic valves, coronary and cerebral arteries, are frequently associated with hypertension.

Diabetes mellitus of long duration apparently contributes to atheromatous vascular lesions and blood pressure elevation. In these patients obliterative changes in the peripheral arteries of the extremities, terminating in gangrene, are common occurrences.

Finally, it may be stated that the chief contributing cause of hypertension and sclerosis is the wear and tear of old age. Senility, with its attendant degenerative changes, cannot be prevented but can be deferred. Premature hypertension constitutes an economic waste and oftentimes deprives its victim of his heritage of maximal development and accomplishment.

European visitors frequently comment on the intensive habits of work in America. Our hurried lunches, daily races for subways and commuters' trains, stock exchange frenzy, and numerous distractions that interfere with sleep and relaxation are regarded as characteristic of our urban life. These doubtless are potential factors in provoking various psychoneuroses, early degenerative changes and hypertension. This increased speed and tension of living, however, is being neutralized in part by the prevalent tendency of the American people to indulge to a larger extent in play and recreation. The automobile and good roads afford more time and opportunity for travel, and sports of various kinds are no longer exclusively the privilege of the young. If the tired, successful business and professional man has contributed in the past to increasing mortality of cardio-vascular diseases, it may be that the next generation will profit by their experience with resulting greater longevity.

In conclusion, it may be said that the problem of hypertension is apparently insoluble in the light of our present knowledge. For the time being we must regard it as a symptom rather than a definite clinical entity. Its causes, doubtless, are as numerous as such symptoms as headache or vertigo. The admission of ignorance of its etiology constitutes a wholesome state of mind and is conducive to further rational investigation. A science that has unraveled, wholly or in part, such clinical puzzles as diabetes, pernicious anemia, pellagra, rickets, and many infectious diseases will not supinely admit defeat in this instance.

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TRANSURETHRAL RESECTION OF THE PROSTATE: REPORT OF CASES.

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There is no subject before the urological world today that has created as much comment as has the discussion concerning the relative merits of instrumental prostatectomy. This is due in no small part to the brilliant work done by Young, Caulk, Davis, McCarthy and others. Caulk says: "Any radical departure from the commonly accepted tenets of medical or surgical practice in the past has been severely combated so that any new procedure to justify its favor in the profession must fulfill certain unquestioned requirements." It is becoming increasingly evident that resection does fulfill certain of these requirements. A sufficiently large number of cases have been reported and observed over a sufficient period of time to permit one to make an estimate as to the relative merits of this method as compared to the open operation. Young has used

his cold punch in well over three hundred cases; Caulk has reported a large series of cases with no deaths directly attributable to his punch operation; Davis has had 360 cases in which his instrument was successfully used with but two deaths. J. F. McCarthy has resected a large series with but one death, while Engel, at the Crile Clinic, Kirwin and others have reported similar series of cases, so that the total aggregate runs well over a thousand cases with a very low mortality. Even the most optimistic advocate of other methods of removal of prostatic obstruction cannot boast of anything approaching this very low mortality. T. D. Moore, in a recent paper on this subject, asked whether prostatectomy is to become obsolete since the advent of the transurethral method. One might well answer in the affirmative in Grades One. Two and Three of prostatic enlargement, but not in the large vascular group of obstructions. However, only in the last decade has the open operative mortality rate been reduced to as low as 5 per cent, and this figure only in the hands of the expert. Since it is generally agreed that an instrumental prostatectomy is much more difficult than the open route, there will be unfavorable reports doubtlessly made in the future by those unaccustomed to its use. Young and Bumpus have shown that contractures at the bladder outlet, median bars and small median lobes can best be handled by transurethral surgery. The only question is in what per cent of bilateral enlargement and large median lobes can this method successfully replace the open operation. Caulk is using it in 85 per cent of all prostatic obstructions; Davis is using it in about 90 per cent, except in those cases in which the prostate is so large, and the bladder capacity so reduced, that the space between the bladder wall and prostate is too small to allow a margin of safety. McCarthy is using it in a majority of all of his cases, as is Engel, at the Crile Clinic.

At the Boston meeting of the Urological Association in 1926, the writer became interested in the Collings method of removal of minor obstructions at the bladder neck with the electrotome used through the McCarthy panendoscope. An instrument was obtained at this time and used on this type of case. However, since the current delivered at the electrode was cutting in type and not coagulating, bleeding could not be adequately controlled. In 1927, Stern developed the resectoscope but this had the same disadvantage, i. e., lack of control of bleeding, causing its use to be abandoned. Davis has modified this instrument, enlarging the aperture, enlarging the cutting loop, and equipping it so that a coagulating current can be passed through the same electrode and thus secure hemostasis. In his hands it has been used in 360 cases with but few deaths directly attributable to its use.

McCarthy recently developed the new visual electrotome for the removal of obstructing prostatic lobes. He says that "canalization" of the urethra and not "excavation" is the goal sought, and it quite suffices to cut through the obstruction, restoring the urethra to its normal calibre. We have all seen the frequency with which prostatic engorgement rapidly subsides with an actual diminution in the size of the gland following preliminary suprapubic cystostomy. This results from relief of the bladder tenesmus and straining with a diminution of the intracapsular tension of the prostate.

Caulk believes that a large portion of these obstructions are inflammatory hyperplasias and not neoplasms, and therefore it is not necessary to remove the gland completely but only to remove the obstructing portion. Sections taken from glands after removal have confirmed this viewpoint, as well as have the opinions of other observers.

One of the chief criticisms heard about instrumental prostatectomy is that it does not do a complete prostatectomy. That this is not necessary has been pointed out by all those operators who use the transurethral method. As Randall points out, capsular tension is a more important factor than the increased size of the gland in producing prostatic obstruction, and asks, "is it not better to subject an old man to a minor surgical procedure rather than to an actual prostatectomy?" Section of the fibrous bar ofttimes relieves the obstruction. The point most discussed and emphasized in this interesting though highly technical procedure is that it is a preventive surgical measure. By educating all men of prostatic age to seek medical aid before cardiovascular derangement occurs, as is found in 45 to 50 per cent of all prostatics, back pressure on the bladder, producing diverticula, stones and serious derangement of the renal system may be avoided. The ideal procedure would be to get the patient when prostatism first asserts itself, characterized by nocturia, difficulty in stopping and starting the urinary stream, diminished

force and dribbling. At the time the obstruction is small and resection of the prostate is attended with little or no danger, the residual urine is relieved and the patient's health becomes markedly improved. Bumpus points out that all that is required in these cases is to remove the obstruction.

The patient to be resected must be given the *usual pre-operative treatment* which has so greatly lessened the mortality of prostatectomy. An indwelling catheter is used for decompression and restoration of the vital functions to their optimum capacity. Determinations are made of the blood nitrogen content, the excretory output of the kidneys, and a careful summary is made of the patient's general condition. The technique of transurethral prostatic resection with the Stern-Davis technique or with the McCarthy visual endoscope is performed under trans-sacral and caudal block, thereby avoiding the more dangerous forms of anesthesia in these old debilitated men. The patient having been placed in the usual cystoscopic position, the indifferent electrode is placed under the buttocks and he is draped with a sterile minor sheet. The resecting instrument is then introduced into the bladder. The bladder is then irrigated until the fluid return is clear, and after carefully adjusting the light and the generating current, the patient is ready for resection. The verumontanum is located as the anterior landmark and is at the apex of the prostate, the posterior landmark being the intravesical portion of the prostate. Figure 1 shows the instrument in place, the loop placed over the projecting portion of the prostate ready for resection. The loop works on a ratchet which describes a one-hundred-eighty degree circle, permitting the removal of a section one inch long and one-eighth to one-twelfth of an inch deep. The size of the pieces may be judged from Fig. 6. As many pieces are removed as one finds necessary to completely relieve the obstruction. Davis believes in removing as much tissue as is compatible with safety, while other workers believe that establishing a trough will cause the rapid shrinkage of the remaining portion of the obstruction. After the cut is made, any bleeding points *must be individually* fulgurated with the coagulating current and thus secure hemostasis. This improvement has done more than any other factor to make this operation a safe minor procedure, since formerly bleeding was its most dreaded complication. It is *imperative* to control bleeding all through the resection; otherwise, vision is impaired and one cannot see what structure is being sectioned. When sufficient tissue has been removed to return the urethral contour to normal and thus relieve the capsular tension, the resectoscope is removed and a No. 14 to No. 20 F. catheter inserted into the bladder through the sheath. The bladder is then irrigated to remove any pieces of tissue and continuous drainage instituted. The spark-gap unit undoubtedly affords much better and deeper coagulation than the "tube type," thus securing better hemostasis.

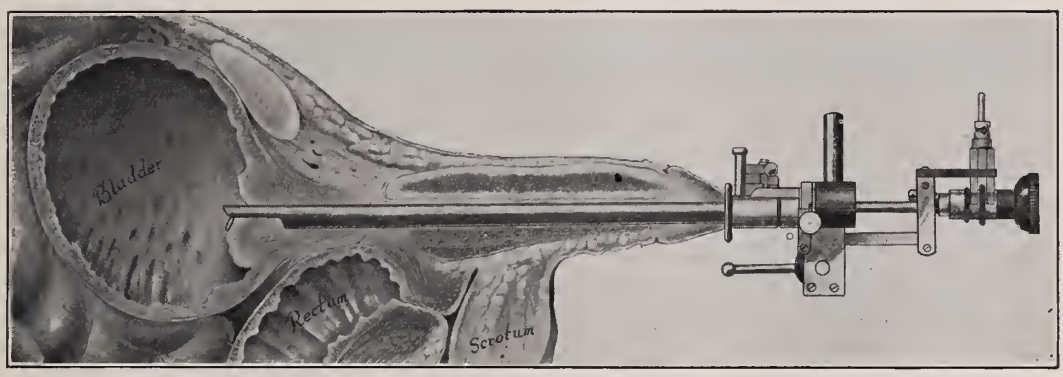

Fig. 1.—Sagittal section showing the electroteme in place ready for resection. Cutting loop is engaged with the obstructing portion of the prostate.

The most important point in the post-resection period is to secure free drainage as there is a marked tendency for secondary renal infection to occur, as happens in the open operation at the time the suprapubic fistula closes. This puts the bladder at rest and lessens tenesmus with its attendant hemorrhage. The catheter is left in place for from two to five

days. After its removal micturition is resumed, somewhat difficult at first, gradually improving as re-epithelization takes place and the infection subsides. The striking thing about this procedure is the absence of shock, seen when an attempt is made to dig out the prostate suprapubically will be obviated, although when metastasis has occurred any form of therapy is hopeless. Intra-urethral manipulation is especially indicated in keeping the

Fig. 2. Medium bar formation shown at the left. The instrument is in place at the right with loop ready to excise bar. In this type of obstruction, resection is much superior to the open operation.

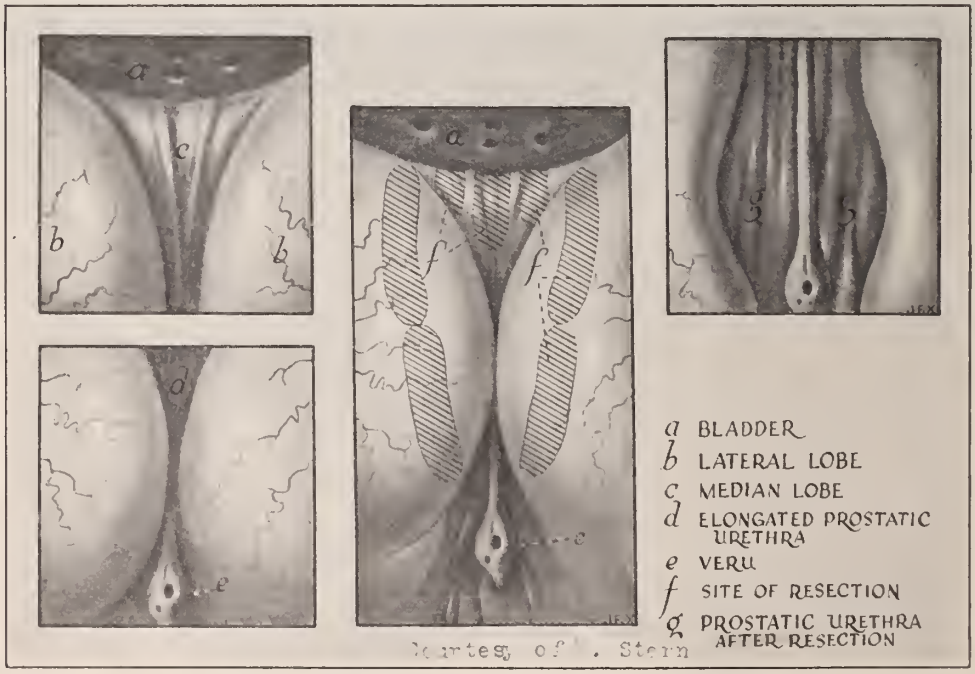

Fig. 3. Topography of the prostatic urethra showing site of removal.

the decreased morbidity and rapid restoration of the urinary function.

Carcinoma particularly lends itself to this form of therapy. With trauma reduced to a minimum, the widespread metastasis so often urethral lumen patent, thus making the patient comfortable.

Intra-urethral obstructive conditions about the vesical outlet, such as tags, recurrence following prostatectomy, or scar tissue with con-

tracture following an operation, may be relieved by this method, provided the instrument can be introduced into the bladder.

The following case reports emphasize the points discussed in the paper:

Case No. 1: Mr. J. B., age 74, entered Georgetown Hospital December 5, 1931, with acute retention. I was called in consultation by Drs. Gannon and Behrend. A rectal examination revealed a type four prostate, symmetrical and smooth. The urethra was tortuous and elongated. A metal sound was required for catheterization, due to the obstruction. After the blood nitrogen and kidney excretory tests became normal following catheter drainage, resection of the prostate was determined upon. Following the first resection twenty-two grams of tissue were removed with very little bleeding. Due to the edema and congestion, too little tissue was removed so that it became necessary to do two more resections after intervals of five days. Following the last resection the patient's catheter was removed on the third day and he voided normally. There is no residual urine at the present time and the stream is normal in size, as is also the prostate gland as determined by rectal examination. The patient has gained in weight and is much improved generally. He was able to resume his occupation very shortly after his discharge from the hospital.

Case No. 2: Mr. T. J. S., age 84, was seen by me in consultation with Dr. Behrend in April, 1927. Chief complaint was difficulty in starting and stopping the urinary stream, diminished calibre of the stream, with increasing nocturia. At this time the patient's blood sugar was over 200 mg. per c.c., and there was marked sclerosis of the vessels. Rectal examination revealed a type three prostate, smooth, symmetrical, and showing no evidence of malignancy. Because prostatectomy was not deemed advisable, intermittent catheterization was practiced. A gradual improvement was noted for several months, after which the patient passed from our observation. In January, 1932, I was again consulted. The patient had a recurrence of his former symptoms in an aggravated form. Vesical lavage did not give any relief and the prostate gland was much larger on rectal palpation. A blood sugar at this time showed only 120 mg. with 18 mg. of blood urea. The phthalein output after intravenous injection was 20 per cent the first fifteen minutes, 10 per cent the second, and 5 per cent the third. Prostatic resection was advised and carried out on January 2, 1932. There was no uncontrolled bleeding during or following the operation and the catheter was removed on the second day. When discharged on the fourth day after entrance to the hospital, the patient was able to void a normal stream and felt quite well.

Fig. 4.—Posterior view showing the manner in which the electrode excises the obstruction. In the McCarthy technique the direction of the loop is forward, while in the Stern instrument it is backward. The figure on the right shows the obstruction following the resection.

Case No. 3: Mr. D. A. C., referred by Dr. W. P. Burns on December 14, 1931. Chief complaint was difficulty in voiding, dribbling and nocturia. Patient gave a history of a gradual increase in the symptoms for the past five years, terminating in acute retention on December 7, 1931. At this time an indwelling catheter was inserted and decompression instituted. After the blood urea and phthalein tests became normal a resection was carried out under sacral anesthesia. On December 21, 1931, eighteen grams of prostatic tissue were removed. There was very little bleeding dur-

ing the resection, which was adequately controlled by fulguration. The catheter was removed on the third day and the patient was able to void, though somewhat unsatisfactorily. Three days later a cystoscopic examination revealed a few tags at the sphincter margin

Fig. 5.—Prostatic tissue removed by resection. This weighed 28.4 grams. Sections made from this show an inflammatory hyperplasia with a mixed bacterial flora present.

which had not been resected. These were removed seven days following the first resection. An indwelling No. 24 French catheter was reinserted for three days. Following removal of this catheter the patient was able to void a good stream which has gradually improved until he now voids normally; he has no nocturia and no residual urine and was able to resume his occupation three weeks after his entrance to the hospital.

Case No. 4: Mr. W. S. A., referred by Dr. Sinclair Bowen; age, 64 years, entered the hospital February 10, 1932, complaining of difficulty in starting and stopping the urinary stream and nocturnal frequency. There were one hundred and fifty c.c. of residual urine. On rectal examination the prostate was found to be Grade Three, symmetrical and no evidence of malignancy noted. Cystoscopic examination confirmed these findings. The patient was treated daily with bladder irrigations for two weeks before entering the hospital, and was found to have a normal blood picture and a total phthalein output of 75 per cent. Under sacral anesthesia, fourteen grams of prostatic tissue were removed. There was no post-resection bleeding. Patient was discharged from the hospital three days later, voiding normally. He has been seen at frequent intervals since that time, has no residual and gets up but once at night.

Case No. 5: Mr. C. W. M., age 61, referred by Dr. G. A. Hopkins, entered the hospital February 22, 1932, complaining of frequent nocturnal urination with difficulty in starting the stream and a marked diminution in the force of the stream. There was ninety c.c. of residual urine. On rectal examination the left lobe was found to be markedly enlarged, symmetrical and showing no evidence of malignancy. The cystoscopic picture showed a marked intravesical protrusion of the left lateral lobe, producing definite obstruction. An indwelling catheter was inserted and decompression commenced. After one week the blood urea, creatinin, blood sugar, blood clotting time and hemoglobin were within normal limits; the phthalein output was 68 per cent. Under trans-sacral block, sixteen grams of prostatic tissue were resected with some bleeding at the time due to its marked vascularity. There was no post-operative bleeding and patient was discharged from the hospital three

Fig. 6.—Prostatic tissue removed from second case herein reported. This weighed 18 grams. Note the length of pieces and their relative thickness.

days later, voiding normally, the residual urine being entirely relieved.

Case No. 6: Mr. R. F. M., age 83, seen on February 1, 1932, complaining of inability to void normally. Patient was somewhat uremic and confused mentally. Decompression was instituted and the blood retention and renal excretion tests became normal. On February

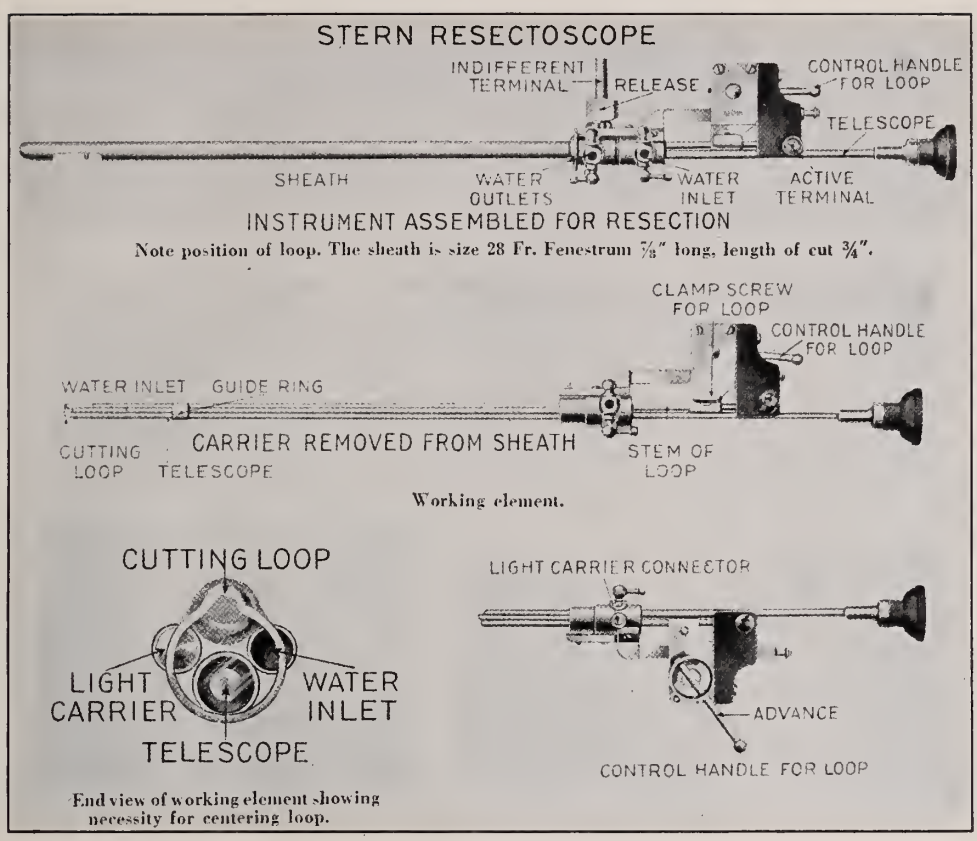

Fig. 7.

8, 1932, resection of the prostate was done. There was some bleeding during the resection which was controlled by repeated coagulation. Twelve grams of prostatic tissue were removed. An indwelling catheter was inserted and continuous drainage instituted. The patient left the hospital two weeks later, voiding normally, with no residual urine.

Lack of space precludes the report of any of the other sixteen cases.

Conclusions

1. In median bars, contracture and other forms of minor obstruction of the vesical outlet, transurethral resection is the method of choice.

2. In hyperplasia of the lateral or median lobes, the obstruction can be corrected in Grades I, II and III, but should not be used in Grade IV or the very vascular type of obstruction nor in very old, feeble subjects. In the presence of complications, such as diverticula or stone, resection may be followed by litholapaxy or excision of the diverticulum.

3. Hemorrhage can and *must be adequately controlled* by using the fulgurating or spark-gap current, thus eliminating the principal hazard connected with this procedure.

4. The mortality has been greatly lessened, the morbidity decreased and the average stay in the hospital reduced to days instead of weeks as formerly.

5. Transurethral prostatic resection is a highly technical procedure and meets all the requirements for this type of work.

6. By treating the patients earlier, cardiovascular, renal and the systemic derangements following massive retention, will be greatly reduced or obviated.

7. Preliminary cystoscopy, orienting the type and character of the obstruction, is necessary.

8. Resection is a supplement to and not a substitute for prostatectomy, each having definite, clear-cut indications.

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THE PHYSICAL AND X-RAY EXAMINATIONS OF THE TUBERCULOUS CHEST.*

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It is not the purpose of this paper to go into a detailed description of the physical and X-ray examinations of the chest in pulmonary tuberculosis. It is sufficient to say that those of you who make a routine practice of examining the chest with care do not need any advice or further information. But those of you who examine the chest more or less casually are not apt to get the information you should have from the examination, and from neglect of making a careful examination, you get so you do not hear abnormal changes when they are present.

The two chief reasons why many of us fail to elicit abnormal findings when present are, first, we do not make a very careful examination of the chest, carefully using all the means at our disposal, and, second, without this careful examination of the chest, we get so we do not recognize abnormal findings due to lack of familiarity with them.

In addition to the physical examination of the chest, it is necessary to have X-ray examination of the chest also, in order to get as complete information as possible, as will be shown from charts and X-ray films that illustrate the findings in some tuberculous chests.

The history and observation will not be considered or mentioned further in this paper, not on account of the lack of importance of these, but due to our efforts to show only the importance of having both physical and X-ray examinations of the chest and in the attempt to confine ourselves strictly to the subject of physical and X-ray examinations.

Case I.—D. W. A.—Moderately advanced.

Physical examination—Positive.

Right Lung:—Moist rales from apex to second rib. Also, increased whispered voice and prolonged expiration over the same area.

Left Lung:—Negative, except for slightly increased whispered voice in the apex. No rales.

X-ray examination—Positive.

Right Lung:—Infiltration in the apex and along first and second interspace trunks. Slight infiltration along third interspace trunks at periphery. Area in second interspace interpreted as a small cavity.

Left Lung:—Slight infiltration in apex and first interspace.

Sputum positive.

Physical and X-ray examinations gave practically the same information, with exception of cavity formation in right second interspace not made out from physical.

Case II.—C. E. R.

Physical examination practically negative.

X-ray examination practically negative.

Sputum positive at another laboratory before patient was admitted. Positive on admittance and three times at intervals while here. Usually no expectoration.

An exceptional positive sputum may be obtained where physical and X-ray examinations are not positive, probably from a caseating area somewhere along the bronchial tract.

Case III.—N. K. D.—Minimal.

Physical examination negative except for slightly increased whispered voice in first interspace, left front. No rales.

X-ray—positive.

Right Lung:—No definite parenchymatous lesion.

Left Lung:—Definite area of infiltration in first interspace, anterior markings, near the periphery.

Sputum—negative.

From the physical findings in this case none of us would make a diagnosis of tuberculosis, whereas the X-ray showed definite infiltration. We find this often true in minimal cases.

Case IV.—F. W. K.—Far advanced.

Physical—positive. Numerous moist rales, bronchial breathing and increased whispered

*Read at the sixty-second annual meeting of the Medical Society of Virginia, in Roanoke, October 6-8, 1931.

voice, over front and back, practically throughout both lungs.

X-ray examination—positive.

Right Lung:—Numerous areas of heavy mottling and infiltration throughout. Cavity formation opposite first and second interspaces, anterior markings. Apex shows probable cavity formation also.

Left Lung:—Marked breaking down of tissue, with cavity formation, from apex to third rib, anterior markings, together with less marked infiltration from third rib to base.

Sputum—positive.

Both physical examination and X-ray showed an advanced lesion.

Case V.—F. M. L.—Far advanced.

Physical examination—June 8, 1931—negative except for a few moist rales from the fourth to eighth thoracic spine on the right back.

Physical examination—July 10, 1931—one month later:

Right Lung:—Numerous moist rales from apex to fifth rib and fifth thoracic spine.

Increased whispered voice and prolonged expiration from apex to third rib and fifth thoracic spine.

Left Lung:—Scattered, fine rales from first to fifth ribs, and from apex to third thoracic spine.

X-ray examination—June 8, 1931:

Right Lung:—Infiltration extending practically throughout, rather dense from apex to fifth rib, anterior markings. Apex and first interspace have appearance of cavity formation.

Left Lung:—Infiltration of moderate density from apex to fifth rib, anterior markings.

Slight haziness below this in base.

This (Case V) and the case just preceding (Case IV) serve to illustrate the differences that may be encountered in physical examination of the chests of patients with far advanced tuberculosis. In Case IV a diagnosis from physical would be all too easy, and we find that the X-ray findings compare with it very closely. In Case V, at the time of first examination the physical findings consisted of nothing more than moist rales over a small area in the back, while the X-ray showed that the patient had far advanced tuberculosis. The physical examination a month later checked closely with these X-ray findings, and we might say that it is not unusual for the physical findings to be very slight at one examination and pronounced some time later without any marked change in the X-ray.

Case VI.—C. S. J.

Physical examination—January, 1930.

Right Lung:—Moist rales from apex to fourth rib and eighth thoracic spine. Increased whispered voice and bronchovesicular breathing over the same area.

Left Lung:—Slightly increased whispered voice in the apex and a few moist rales in the back in the region of the fifth thoracic spine.

Physical examination twenty-one months later showed practically the same findings.

X-ray examination—January, 1930.

Showed tuberculous infiltration confined chiefly to upper right, with areas interpreted as cavity formation.

X-ray examination twenty-one months later, at the same time last physical examination made, showed nothing more than a little hazy infiltration in apex and first interspace on the right.

This case serves to show that both physical examination and X-ray films are necessary to ascertain the course or progress of the disease from month to month and year to year.

The findings shown here can be demonstrated over and over again in patients undergoing treatment. As you can see from this, in spite of the importance of the physical examination of the chest, it is necessary, also, to have X-ray examination, repeated at intervals, in order to give us the proper conception and idea of the tuberculous involvement present and, also, the progress of the disease. In suspected pulmonary tuberculosis, it is dangerous to pass up the X-ray examination, after making a physical, as some of these cases will show findings from the X-ray examination on which a positive diagnosis can be made and which would probably be passed up as negative from the physical alone. Also, this is true in many minimal cases. To a less extent it is true in moderately advanced cases, and occasionally in far advanced cases.

In most cases, a study of the physical and X-ray examinations together gives the most complete information and enables us to visualize the lesion to the best advantage, while from the physical examination alone we could be misled as to the extent and seriousness of the disease. Cavity formation can often be made

out from the X-ray examination when no physical signs of it can be found. The X-ray examination is usually of greater help than the physical in determining the progress of the lesion. An exceptional case may be found in which the sputum is repeatedly positive, while the physical and X-ray examinations are consistently negative.

To diagnose and treat pulmonary tuberculosis successfully, it is necessary that we have all the information that it is possible to obtain, and we cannot get this information without both physical and X-ray examinations of the chest.

NOTE.—This paper was illustrated by lantern slides.

DISCUSSION

DR. W. E. BROWN, *Sanatorium:* Dr. Nicholl's paper and illustrations have been repeatedly verified in my own experience. Every point that he has brought out to you we have had happen in our work at Blue Ridge Sanatorium. There has been nothing new found in recent years in the way of improving the methods of physical examination, but the technique of roentgenological examination of the chest has developed by leaps and bounds. I well remember, at the meeting of the National Tuberculosis Association, in Cincinnati, in 1917, when Dr. Kennon Dunham showed X-ray pictures of tuberculous chests, he was the most hard-grilled man by our leaders in tuberculosis work that I have ever seen. He, however, stood by his guns and after they had riddled him with all the ammunition they had he brought the lungs of the people whose X-rays he had been showing and cut them open for exhibition, and proved his contentions, taking the meeting by storm. Up to that time I had repeatedly heard men say, "The other fellow can have the X-ray but give me my stethoscope." I would not belittle the importance of physical examination but if you had a patient for me to examine and told me that I could take a stethoscope and examine him, or have proper X-ray stereo films of the chest, and could only use one of these two methods, I would take the films.

We all remember Dr. Lawrason Brown's five points on tuberculosis. They seem to be basically sound. They are: (1) The finding of tubercle bacilli in the sputum; (2) The presence of moist rales above the third rib in front or above the third thoracic spine in back; (3) Demonstration on X-ray films of a definite parenchymatous lesion above the second rib in front or above the body of the fourth dorsal vertebra in back; (4) History of pleurisy with effusion; (5) Hemoptysis. He said that we would never be justified in making a diagnosis of pulmonary tuberculosis unless one of these five points could be demonstrated.

THE VALUE OF THE ROENTGENOGRAM IN THE STUDY OF MASTOIDS.*

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The roentgen ray as a diagnostic aid in mastoid disease has been in general use for several years. During this period there has probably been less general improvement in the method than in some other fields of roentgen diagnosis. This seems rather strange when we consider there are no basic fundamental obstacles to the method.

The roentgen ray is a physical agent, capable of being controlled, and when properly controlled, it will record accurately variations in density of structures.

To obtain accuracy in diagnosis, a roentgen study of the mastoid should be made carefully and with proper attention to detail. This involves:

1. Films of the greatest possible technical quality.
2. The use of standard angles of exposure, which can be accurately reproduced.
3. The use of stereoscopic films when considered advisable.
4. A careful study and interpretation of the films so produced.
5. A knowledge of the pathological changes incident to mastoid disease.
6. Proper cooperation between the surgeon, or otologist, and the roentgenologist.

Little time need be taken to discuss the first requisite—good films. These can be produced in any laboratory if sufficient pains are taken to do so. The use of fine focus tubes, small diaphragms, immobilization of the patient, and proper attention to developing technique, will help to improve the quality of mastoid roentgenograms.

The proper reading of the film depends upon the clearness with which the fine lines of the cell walls are seen and the detailed visibility of the bony texture of the non-cellular region. If the film is too light, the relative contrast between the bone and cell cavities is lost; if too dense, the entire mastoid is fogged, even though the cells are occluded by pus.

The use of standard angles cannot be stressed too strongly. These angles should not be guessed at, but should be measured by whatever means the individual worker prefers. It is preferable to place both mastoids on the same film, in order to facilitate comparison, as in the majority of cases only one side is diseased. It is obvious that the films of the right and left mastoids must be similar, or comparison is difficult. For the same reason, films of the same mastoid made at different times must be similar or the value of the subsequent examinations will be lost. While stereoscopic films are per-

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haps preferable, it is only in exceptional cases that they are essential, for instance, when an accurate determination of the position and depth of the sinus is desired, where there is doubt as to a suspicious shadow suggestive of bone destruction, where it is necessary to determine the presence of diploetic bone, or where an examination is required of an unhealed operative area.

In the interpretation of the roentgenogram we must bear in mind that we are dealing with shadows of varying density, and time must be taken to study them carefully for pathology. We must be able either to compare the special areas of one side with corresponding areas of the opposite side, or, if this is not possible, to compare the mastoid with our mental picture of what the normal appearance should be. Therefore, the roentgenogram of the two mastoids should be as nearly alike in density and contrast as it is possible to make them. Ordinarily, the surgeon needs only to know the type of mastoid, the degree of involvement of the cells and bony trabeculae, and the presence or absence of cavity formation, to pass judgment on the treatment of a case. However, it is essential to stress the fact that all roentgenographic examinations are only a part of a more complete general examination. The history, the clinical evidence and the pathological laboratory findings should be correlated with the roentgenographic findings in the final summing up of a case. Therefore, close cooperation is necessary between the surgeon and the roentgenologist.

There is considerable difference of opinion among surgeons regarding the modus operandi in mastoid disease. Some advise early operation and others take the more conservative view, and attempt to clear up a condition without operation, and it is here the roentgenogram may have considerable bearing on the final decision.

It is obvious that operations would be performed in many cases which are X-rayed even if no roentgenogram had been made. However, in cases where operation is clearly indicated by the clinical evidence, the knowledge of the regional anatomy and the pathological variation from the normal as indicated on the film is often of invaluable assistance to the surgeon.

Before proceeding further with the discussion of the interpretation of roentgenograms of the mastoid, we will briefly review the anatomical landmarks and development of the mastoid process.

The temporal bone contains certain landmarks which are employed as guides in operating and describing a pathological condition within the mastoid.

Generally speaking, the mastoid process may be identified under two distinct types, the non-cellular and the pneumatic, the essential difference existing in the cellular structure of the area between the posterior canal wall in front, the tegmen tympani above, the limiting border of the mastoid behind and the tip below. The relations of the canal, antrum and sinus are practically the same in both types.

The non-cellular type of mastoid may be further sub-divided into (1) undeveloped or infantile, (2) diploetic, and (3) sclerotic, and from a radiographic standpoint, very little distinction can be made between them. They all present a more or less dense homogeneous shadow, devoid of cellular detail. According to Law, the diploetic type of mastoid will show a fine meshwork of diploe, usually near the tip, and necessitates a technically perfect film to make detection possible. The infantile and diploetic types are the result of a developmental failure in cellularization. The sclerotic type, on the other hand, is due to a chronic inflammatory process which has caused the obliteration of previously existing cells, and replaced them with hard eburnated bone. This bone is much harder than the normal bone of an undeveloped mastoid. A roentgenogram of this type, combined with a history of chronic suppuration, is usually indicative of sclerosis. As stated above, however, the differentiation between these three types is usually difficult.

The pneumatic type of mastoid may consist of large, small or mixed cells, or there may be a combination of the cellular and non-cellular types. The size and cellular appearance of the normal mastoid varies a great deal in different individuals, yet it has been determined from specimens and roentgenograms that the two pneumatic mastoids are essentially symmetrical in the same individual, with very few exceptions. This is a very fortunate ruling of Nature, as a comparison of the two mastoids helps materially in the interpretation of the roentgenogram.

A pneumatic mastoid may be very small, or it may be quite extensive. According to Law,

the average mastoid measures one and one-half inches from the tip to the tegmen and about one inch from the posterior canal wall to the center of the posterior border of the process. The cells frequently extend well forward into the zygomatic region, upward into the squamous portion of the temporal bone, and posteriorly into the occipital bone.

The mastoid antrum is located above and slightly posterior to the auditory meati. It cannot, as a rule, be identified as an individual cell being superimposed by smaller cells nearer the cortex. It is in this region that the first changes of an acute mastoiditis become evident.

Just behind the auditory canal is a dense area of non-cellular bone which is the posterior canal wall. This is an important landmark, for within this wall, is the facial nerve. Another most important anatomical landmark is the lateral sinus, which can often be seen throughout its longitudinal and sigmoid portions. Sometimes it shows very clearly and sometimes very faintly, or not at all. The reason for this is quite evident when the cellular structure surrounding the sinus is considered. In the normal pneumatic mastoid, the sinus groove is usually only faintly visualized, but in the pathological or undeveloped type the visibility is increased, due to the increased density of the surrounding area. The sinus may be situated anteriorly, posteriorly or in a median position, in relation to the posterior canal wall, which information is of considerable importance to the surgeon.

The mastoid emissary vein may occupy a position anywhere between the tip of the mastoid and the knee of the sinus. When seen on the roentgeogram, it should be reported to the surgeon, so as to avoid accidental injury and unnecessary bleeding during operation.

The foregoing pertains to the adult type of mastoid. Until recently, it has been the general opinion of roentgenologists, as well as otologists, that in children under three years of age a roentgenogram of the mastoid process would yield practically no information, because pneumatization had not taken place to any extent, except in very unusual cases. Recent roentgenologic studies and observations, however, with the employment of more perfected technique, have proven this opinion to be incorrect.

In a roentgenologic study of forty-six (46) children under five years of age, seven of whom were less than one year old, Evans concludes: "Pneumatic mastoid structure is frequently observed before the end of the first year of life. The adult mastoid structure can be observed as early as the second year."

Martin, in a recent article states: "After the age of six months, a cavity having the shape of the mastoid, can be demonstrated below the tegmen tympani and behind the external auditory meatus, in good roentgenograms. This cavity varies markedly in size and may measure three-fourths of an inch in diameter and show definite cell structure by nine months, though such excessive development is unusual.

Granger, in a recent study of a large number of infants, concludes that in radiographs of healthy mastoids of infants under one year of age, one sees only the large mastoid antrum, and in those from one to two years of age, besides the mastoid antrum, the clear osseous substance of the mastoid can be seen. After the second year, the mastoid begins to pneumatize, the cells are of the diploetic type, and the anterior wall of the lateral sinus, only slightly visible at first, becomes more distinct as pneumatization progresses.

From the foregoing radiographic and anatomic data, one must conclude that it is possible to diagnose radiographically, mastoid pathology in infants and children, provided satisfactory films are obtained. After having examined a considerable number of babies, in many of whom mastoid infection was only suspected, there is no longer any doubt in my mind as to the real value of the roentgen examination. Pus, or granulation tissue, will produce a demonstrable difference in the shadow on the affected side when compared with the normal side, though double infections make interpretation more difficult.

It is true that some cases are encountered where the development is so poor that little information can be obtained, but fortunately they are not common. At any rate, I believe, any infant of any age in whom mastoid infection is suspected, is entitled to an attempt at a satisfactory roentgenogram.

In the interpretation of a mastoid roentgenogram, the following are to be looked for:

1. Anatomic structure and development.
2. Variations in density.
3. Softening and absorption of bony walls and intercellular septa.
4. Appearance of tegmen and sinus groove.

In a normal pneumatic mastoid, the cell walls stand out as definite dense shadows surrounding the clear transparent areas, or air spaces. Anything in the locality of the mastoid, either intra- or extra-mastoidal, which offers added resistance to the roentgen ray, will cause a change in the transparency of the cells of varying degrees. There may, or may not be, obliteration of the intercellular septa, depending upon the condition.

As stated before, increased density and clouding of the cells intensifies the line of the sinus groove and causes it to stand out more clearly, which may be the only sign of mild pathology. A slight haze or cloud over the region of the mastoid cells, with no change in the cell walls, is usually indicative of mild acute inflammation, which may be only a contiguous hyperemia, or edema, incident to acute otitis media. However, it becomes evident that such conditions as furunculosis or eczema of the external auditory canal and post-auricular adenitis or cellulitis, may produce the same degree of opacity and must be considered in making a differential diagnosis.

A more marked increase of density and clouding of the cells is indicative of exudate, or pus and granulation. The roentgenogram shows an increase of the clouding of the cells in direct proportion to the amount of pus present. These changes in density may involve the entire mastoid process, or may be found in localized areas within it. If the discharge of pus is free and the type of mastoid is favorable, resolution may occur and the purulent mastoiditis may gradually clear up without any definite change in the bony trabeculae. On the other hand, if the formation of pus is in excess of the drainage, the pus accumulates in the cells until pressure takes place. With the increased pressure of the encapsulated pus, something must give way. If the cortex is thin, the pus may break through at that point, or if it is sufficiently thick, the pressure exerted on the intercellular septa causes them to soften and break down, due to shutting off of the blood supply.

In a mastoid process that contains cells with moderately thick walls, the early destructive changes can be detected on a good roentgenogram by a thinning of the walls. When the process progresses to necrosis and destruction, the separate cells begin to break down and form one large cell or cavity, and if it continues far enough, most or all the septa are destroyed and we have a large abscess formation, or a coalescent mastoiditis.

According to Law, this breaking down process usually begins at the knee of the sinus, although occasionally at the tip. If the necrosis continues further, the sinus wall becomes uncovered and the sinus exposed, causing a perisinus abscess. The necrosis may also occur above the antrum and the tegmen, accompanied by erosion of the inner table and the exposure of the dura, with the formation of an epidural abscess. Therefore, in studying mastoid roentgenograms, the sinus wall and tegmen should be carefully inspected for any erosion or solution in continuity.

The roentgenogram, properly interpreted, may be of invaluable assistance to the surgeon in determining whether or not operation is indicated in a particular case. In determining this point, the anatomical structure of the mastoid as well as the structural changes must be taken in consideration. If the case is to be treated conservatively, free drainage is absolutely necessary. As the mastoid must drain through the antrum, the size of the cells in this region plays a very important role. Large cells naturally allow better drainage than small cells, which easily become blocked by pus or swelling and edema of the mucous membrane, thereby obstructing drainage. Therefore, a mastoid which contains large cells in the antral region is more apt to improve without operation than one with small cells. In this type of case, subsequent roentgenograms made at suitable intervals will indicate which way the case is developing. Needless to say, the clinical evidence should be given due consideration. Repeated attacks of otitic infections will produce definite osteitic changes within the mastoid process, ranging from thickening of the cell trabeculae to marked sclerosis and eburnation, depending upon the severity and chronicity of the infection.

These conditions can usually be definitely recognized in the roentgenogram and may involve part or all of the mastoid process.

Occasionally in cases of chronic otitis media, a condition known as cholesteatoma will result in destructive changes in the mastoid process, which radiographically resembles a cystic formation and contains gelatinous material mixed with debris with foul odor. It may vary in size from a small area to one including the

entire mastoid and usually shows a definite limiting border of increased density due to the resulting osteitis. This condition should be differentiated from: (1) an abscess cavity, (2) a large pneumatic cell, and (3) a cyst, which as a rule is not difficult.

In post-operative cases very valuable information may be obtained from the roentgenogram, when the necessity arises for investigation, to determine the causes for persistent discharge and delayed healing. A roentgenogram of the case will reveal the entire operative field, and, if any cells were not removed, they can be readily located.

Stereoscopic films are preferred in this examination in order to better locate the position of the remaining cells, if any are found. In a complete operation, the roentgenogram shows the clear excavated area, devoid of cellular structure, with the sinus clearly visible and the border of the operated field well defined.

Summary

1. The roentgenogram is a valuable diagnostic aid in the study of mastoid disease.

2. Accuracy in roentgen diagnosis is dependent upon careful and painstaking technique, careful and thorough study and interpretation of the roentgenogram, and proper cooperation between the otologist and roentgenologist.

3. A roentgenogram of the mastoid should reveal the following information:

(a) Anatomical data.

(b) Abnormal variations in density.

(c) Absence or presence of destructive changes.

(d) Absence or presence of productive or sclerotic changes.

(e) Whether or not a pathological process is progressive.

4. In infants and children the presence of pathological conditions of the mastoid can usually be detected in good roentgenograms.

5. Radiographic findings should be correlated with the history, the clinical evidence and the pathological laboratory findings in the final summing up of a case.

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TRICHINIASIS—FIVE CASES IN ONE FAMILY—WITH RESULTS OF SKIN TESTS.*

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Trichiniasis or trichinosis is not a common disease in the United States if available records are an indication of its incidence. It is probably much more prevalent than we believe and there is no doubt that many mild cases escape recognition. Even typical cases with severe manifestations may be readily confused with more familiar diseases.

A review of the literature for the past ten years reveals only one significant development. Bachmann,[1] working with guinea pigs and rabbits, developed an intradermal test and a precipitin test for the diagnosis of experimental trichiniasis. There have been several instances in which these tests have been positive in human beings.

The findings in five cases in one family with observations on the diagnostic problems which arose are presented, together with the results of skin tests performed with an extract of trichinae, according to the method of Bachmann.

The excellent articles of Blumer,[2] Aldridge,[3] Conner,[4] and Opie[5] should be consulted for details not included in the following very brief review of the more practical aspects of this infection.

Etiology: In man the disease comes from eating raw or partly cooked flesh from hogs infested with trichinae or trichinella spiralis,

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a small ovoviviparous nematode or round worm. The adult female, which is 3 to 4 mm. long, is about twice as large as the male.

A brief review of the life cycle of the trichina simplifies and anticipates the clinical and pathological features of the disease. The worm may exist in an inactive, encysted, nearly mature form in the skeletal muscle of any animal, more commonly in the rat and hog. When this muscle is eaten by another animal the cyst wall is digested by the gastric juice of the new host and the hitherto inactive larvae set free. They mature rapidly in the small intestine. The females, after copulation, burrow into the intestinal mucosa far enough to discharge living embryos into the lymph spaces, four to seven days after ingestion.[3]

These young embryos, about 1,000 from each fertilized female, then invade the intestinal wall. Some may appear in the peritoneal cavity, but the majority follow the lymph vessels to the blood stream by which, after passing through the lungs, they are promptly distributed throughout the body.

At this stage they exert a selective point of attack. They invade and enter individual skeletal muscle fibers, which soon degenerate. Other tissues are not specifically affected. In two or three weeks the embryos have grown almost to adult size and have coiled up in the cyst which promptly forms about them. There is no further development of the embryo, which remains quiescent until eaten by another animal. Then the life cycle is repeated.

Grey rats are believed to be very commonly infested and, being cannibals, tend to perpetuate the disease. Hogs are thought to become infested from garbage into which rats or uncooked pork have been thrown. Infected meat may be rendered safe by heating for a few minutes to 160 degrees F., or by cooling to 5 degrees C. for twenty days. Fecal contamination from infected animals or persons does not produce the disease because the parasite does not withstand gastric digestion unless it is encysted.

Clinical Features: The growth, fertilization and procreation of the trichinae in the intestine are frequently associated with gastrointestinal symptoms which are not at all distinctive. The characteristic symptoms appear during the second week when the embryos, carried by the blood, invade skeletal muscle fibers and produce widespread acute myositis. Typically the myositis is most marked in the deltoids, gastrocnemii, intercostals, diaphragm, tongue, and extrinsic eye muscles. As a result they become swollen, firm, tender, and painful on motion. Moving the arms, walking, breathing, chewing, talking, and use of the eyes cause pain. The swelling is usually more obvious around the eyes than elsewhere, but is also quite characteristically found in the feet and legs. The widespread myositis is accompanied by fever and leucocytosis. Indeed, the fever and toxemia may be typhoidal in character. Many bizarre manifestations may occur during this period of invasion by the embryos.[4] For example, instances of exophthalmos, encephalitis, myocarditis, tonsillitis, meningitis, polyserositis, otitis media, and selective involvement of only one muscle group have been recorded. It is interesting to note that the lungs seem to be irritated by the passage of many parasites, with the result that bronchitis, pneumonia, and asthma are frequently present. Opie[5] has demonstrated collections of eosinophiles in the lungs of trichinous guinea pigs.

Symptoms begin to subside when wholesale invasion of muscle fibers ceases, and disappear when all the embryos become encysted, three to ten weeks after eating the infested pork.

It is quite obvious that the severity and duration of the symptoms will vary directly with the number of embryos reaching the muscles and that many cases will be so mild as to escape detection.

The *diagnosis* is easy if the disease is suspected. The gastrointestinal symptoms are not distinctive and are usually thought to be due to dysentery, a dietary indiscretion, or summer diarrhea. The muscle pains and fever are frequently mistaken for grippe or mild influenza, or, when more severe, they may simulate acute arthritis, rheumatic fever, early poliomyelitis or early osteomyelitis. The edema of the eyes strongly suggests nephritic edema or disease of the paranasal sinuses. The bronchitis, asthma, and pneumonia are rarely attributed to trichiniasis, though they may be the most obvious manifestations of the disease. X-ray examination of the lungs may, with the physical signs, lead to an erroneous diagnosis of tuberculosis. Somnolent, toxic cases may be mistaken for typhoid or encephalitis.

When trichiniasis is suspected early, the adult parasites may sometimes be found in the stools. During the period of invasion embryos may be found in the blood stream. They are readily demonstrated in the peripheral blood if about 5 c.c. are laked in 3 per cent acetic acid, centrifuged, and the sediment examined. After the muscles have been invaded, the embryos may be found with ease in a small bit of fresh, or fixed and stained muscle, preferably taken from the musculotendinous junction of the gastrocnemius. In stained preparations the accompanying myositis may be severe and, indeed, if the infestation is slight, may be the only evidence of the disease unless serial sections of several bits of tissue are examined. The cysts with the coiled parasites are readily recognized, the cysts staining pink and the embryos blue with hematoxylin and eosin.

Eosinophilia is typical. It usually appears in five to eight days. It varies from 6 to 60 per cent in individual cases and from day to day in the same case. The finding of 6 to 10 per cent eosinophiles in the blood smear should alone suggest the possibility of trichiniasis. Cases which are very mild or very severe or those complicated by pneumonia sometimes fail to show eosinophilia. The percentage of eosinophiles is not an index of the severity of the disease.

Bachmann,[1] realizing the importance of an early diagnosis, working with rabbits and guinea pigs, reported the presence of detectable precipitins as early as the twentieth day. He also developed a technique for skin testing, using an extract of powdered trichinae as the antigen, which gave positive results on the fifth day. His experiments seem to be sufficiently well controlled to establish the specificity of his results.

The *prognosis* varies directly with the intensity of the infestation. Available statistics show the death rate to be somewhat over 6 per cent. This figure is probably much too high and cannot be accepted as a reliable index of the prognosis. Many cases are unquestionably not diagnosed and are, therefore, not included in the statistics, which are based largely on the cases recorded in the registration area of the U. S. Department of Commerce. In fatal cases death is usually due to pneumonia or toxemia. The pneumonia may begin during the period of invasion when the trichinae are passing through the lungs or later, when the myositis in the intercostals and diaphragm promotes hypostasis by markedly reducing the respiratory excursion. With encystment there is usually a return of normal function. Sequellae are very rare though occasionally muscle pains persist for years.

No specific *treatment* has been found. Many remedies, including convalescent serum and irradiation, have been tried. Theoretically, anthelmintics and those cathartics which act upon the jejunum and ileum administered during the incubation period should decrease the number of invading trichinae. Unfortunately the diagnosis is rarely suspected this early. After invasion has begun, it is obvious that little benefit could be derived from these measures.

During the stage of invasion and before encystment has begun, intravenous anthelmintics seem logical. It is not unlikely that the favorable reports from the clinical use of arsphenamine[6] and tartar emetic,[7] and the experimental use of neutroflavine[8] are due to their use during this stage. One of us had one mild case a few years ago which responded to tartar emetic exactly as did the case reported by Grove.[7]

After the myositis and edema are well established, it does not seem logical to expect appreciable improvement from any form of specific therapy. Indeed, the treatment must be purely symptomatic and directed towards the relief of pain and the elimination of toxins.

The Outbreak: The mother of seven children, 11, 9, 8, 5, 2, and 1 year old twins, died in the hospital of pneumonia (a review of her record suggests that she had trichiniasis, but this was not proven). The father was physically and economically unable to provide adequate care for the children. The chief articles of diet were home cured ham and bread. Frequently the ham was not cooked at all. The hogs from which the hams were cut had been fed on garbage in which a number of dead rats had been found. The relevant features of each case follows:

Case I: Claude G., a boy, aged 5 years, was admitted to the University of Virginia Hospital on January 2, 1930, complaining of "asthma" and "fever."

The past history was unimportant except for asthma.

Physical examination showed a fairly well

nourished white boy obviously acutely ill and very irritable. The throat was slightly injected, breath sounds were wheezing in character, and musical and moist rales were heard. Expiration was somewhat prolonged. The liver edge was palpable 3 cm. below the ribs in the mid-clavicular line. Rectal temperature on admission was 102.6 degrees.

On January 7th, five days after admission, the child's condition was obviously more alarming. Rectal temperature was 103.6 degrees. He complained of slight pain when his arms were moved, the pain apparently being referred to the shoulder regions. An X-ray of the chest taken at this time was suggestive of tuberculosis. On January 12th there was marked tenderness of the thighs, particularly on the left side. The child lay with the extremities in a flexed position and bitterly resented any efforts to move him. The abdomen was distended and there was some generalized tenderness. Osteomyelitis of the left femur was suspected but an X-ray of this region was normal. The following day edema was noticed for the first time, appearing first in the ankles, then in the face, and, later, in the neck, hands, lower legs, and mastoid region. Examination of the ears at this time showed a red bulging drum on the left side. Myringotomy was performed and thick pus obtained. The following day respiration became difficult and chest examination showed diffuse pneumonia. At the same time an indurated swollen area appeared in the submental region and the patient had difficulty in opening his mouth. The patient rapidly lost ground, abdominal distention and edema increasing. Death occurred on January 24th, twenty-two days after admission.

Examination of the urine was negative. Specimens of blood at the height of the illness failed to agglutinate bacillus abortus, bacillus typhosis, or bacillus tularense.

Blood examinations at the time of admission were as follows: Hemoglobin 65 per cent, red blood cells 4,250,000, white blood cells 15,000, p.m.n.s 85 per cent, lymph 14 per cent, l.m.n.s 1 per cent. Stool examination showed ova of ascaris lumbricoides. Wassermann and intradermal tuberculin tests were negative. Twelve days after admission the blood findings were: P.m.n.s 63 per cent, lymph's. 15 per cent, l.m.n.s 3 per cent, eosin. 19 per cent, a few macrocytes, slight anisocytosis and diffuse polychromatophilia.

A sample of blood examined January 18th showed the presence of trichina embryos. Blood cultures were sterile.

Biopsy from the gastrocnemius muscle on January 20th showed the muscle heavily infested with trichinae.

The positive autopsy findings were edema of the feet and ankles, fatty liver and kidneys, and congestion of the transverse colon. Numerous sections of the lung failed to show the presence of trichinae or collections of eosinophiles.

Case II: Robert G., an 11 year old boy, was admitted to the hospital for tonsillectomy, and for observation because of trichiniasis infection in a brother. For two weeks previous to admission the boy had seemed drowsy and listless. There had been no muscle tenderness, no edema, and no gastrointestinal symptoms. At no time during his stay in the hospital did he show symptoms of infection with trichinae, other than a slight temperature.

Urinalysis and blood Wassermann were negative. Examination of the blood showed hemoglobin 95 per cent, red blood cells 4,420,000, white blood cells 10,600, p.m.n.s 74 per cent, lymph's. 14 per cent, l.m n.s 4 per cent, eosin. 12 per cent. Other blood examinations showed an eosinophilia as high as 41 per cent. Two c.c. of peripheral blood showed no trichinae. A biopsy from the gastrocnemius muscle showed no embryos, but a very definite myositis.

Case III: Frances G., a 9 year old girl was admitted to the hospital for observation on account of trichiniasis in another member of her family.

Past history was unimportant.

The admission examination showed the child well nourished and somewhat irritable. The rectal temperature on admission was 101.2 degrees F. The face was flushed and slight edema of the lids was evident. The pharynx and tonsils were slightly inflamed and the cervical, axillary and inguinal glands were palpable. Rales were heard throughout both lungs. They disappeared after three days. There was no edema of the extremities and muscle tenderness was not elicited. Two days after admission the edema of the lids had increased and there was slight edema of the ankles. By the following day edema had in-

creased and was pitting in character over the tibiae. There were no gastrointestinal symptoms. All symptoms and signs were absent at the time of discharge from the hospital.

The urinalysis on admission was negative. Blood Wassermann was negative. The stool showed ova of ascaris lumbricoides, trichiuris, and cysts of ameba coli, but no trichinae. Blood examination was as follows: White blood cells 4,600, p.m.n.s 65 per cent, lymph's. 27 per cent, eosin. 8 per cent. Subsequent blood examinations showed an increasing eosinophilia, the maximum percentage being 28 per cent. No trichinae were found in the peripheral blood. A biopsy from the gastrocnemius muscle showed no trichinae in the muscle, although a very definite myositis was present.

Case IV: Fannie G., a white girl, 8 years of age, was admitted to the hospital on January 20, 1930, complaining of pain in the arms and legs and difficulty in walking on account of pain, these symptoms being first noticed four days before admission. Constipation had been present for several days.

The following physical findings were noted: The throat was slightly inflamed. The muscles of the extremities appeared tender, and passive motion of the arms and legs caused pain. There was slight edema of the extremities, while edema of the eyelids was distinct. The abdomen appeared distended. Edema and muscle tenderness and irritability became more marked as the illness progressed. Twelve days after admission the child developed a croupy cough. Respiration became rapid and examination of the chest showed the presence of bronchopneumonia. An X-ray of the chest taken on the following day verified this diagnosis. Chest signs persisted for ten days, during which period the child appeared very ill. Recovery was complete and the patient was discharged from the hospital on February 20, 1930, one month after admission.

Laboratory Examinations: Urinalysis was negative. Stool showed ova of ascaris lumbricoides. Wassermann was strongly positive. Subsequent blood examinations showed an eosinophilia as high as 12 per cent, white blood cells 8,300, p m.n.s 70 per cent, lymph's 21 per cent, eosin. 9 per cent. Larvae of trichinella spiralis were found in 3 c.c. of peripheral blood, and a biopsy from the gastrocnemius muscle showed the coiled forms of the parasite. Subsequent blood examinations showed an eosinophilia as high as 31 per cent.

Case V: Ola Mae G., a 2 year old infant, was admitted for observation on account of a proven case of trichiniasis in her family. For three weeks previous to admission the child had suffered from diarrhea, with four or five watery yellowish stools a day. The presence of muscle tenderness previous to admission could not be determined.

Physical examination showed a well developed child. Rectal temperature was 99.4 degrees F. The face and eyelids appeared puffy. There was slight pitting edema over the tibiae. The child was irritable and cried when handled, as if in pain. Two days after admission edema of the lids had increased.

Urinalysis was negative. The blood Wassermann was doubtful. Examination of the blood showed hemoglobin 75 per cent, red blood cells 3,970,000, white blood cells 9,100, p.m.n.s 39 per cent, lymph's. 38 per cent, l.m.n.s 4 per cent, trans. 5 per cent, eosin. 14 per cent. Subsequent blood examinations showed no further increase in eosinophiles. No trichinae were demonstrated in 2 c.c. of peripheral blood. A biopsy from the gastrocnemius muscle showed numerous coiled embryos. Recovery was uneventful.

The incidence in these cases of the more common manifestations of trichiniasis with observations on the effect of treatment, etc., is summarized in Table I.

It will be noted that irritability occurred four times and drowsiness once, muscle pains three times, edema four times, diarrhea once, constipation once, pneumonia or bronchitis three times, fever five times, leucocytosis five times, eosinophilia five times, other parasites in stools four times, trichinae in blood three times, trichinae in muscle three times, with marked myositis in the other two. One died. Another was critically ill. Two had mild but typical symptoms which might easily have been overlooked. The other had no subjective symptoms whatever but had typical laboratory findings. It is obvious that the last case would never have been suspected had he not been a member of this family.

Tartar emetic was tried in four of the cases, in doses recommended by Grove,[7] without apparent benefit. Improvement in the fourth case was coincident with the administration of neoarsphenamine, after a thorough trial of tar-

TABLE I

CASE	CLAUDE	ROBERT	FRANCES	FANNIE	OLA MAE	TOTAL
Admitted:	1/2/30	1/22/30	1/22/30	1/22/30	1/22/30	
Irritable	+	Drowsy 0	+	+	+	4
Muscular pain and tenderness	+	0	0	+	+	3
Edema	+	0	+	+	+	4
Diarrhea	0	0	0	0	+	1
Constipation	0	0	0	+	0	1
Pneumonia	+	0	0	+	0	2
Bronchitis	+	0	+	+	0	3
Fever	100–104	99–101	99.5–103	100–102	99.5–101.2	5
LABORATORY FINDINGS:						
Leucocytosis	12–15000	10–13000	5–1000	7–12000	9–13000	4
Eosinophilia	0–19%	12–41%	8–28%	9–31%	11–21%	5
Parasites in stools	Ascaris	0	Ascaris trichiuris ameba	Ascaris	Ascaris	4
Trichinae in blood	+	0	+	+	0	3
Biopsy	+	Myositis	Myositis	+	+	5
Skin test	None done	++++	++++	++++	++	4
Treatment: tartar emetic	N. G.	0	N. G.	N. G. Neoarsph	N. G.	N. G.
Severity	Died	Mild	Moderate	Severe	Moderate	

tar emetic. The neoarsphenamine was not administered, however, until the child had been ill more than two weeks, when spontaneous recovery might be expected.

The first case was suspected of having poliomyelitis and osteomyelitis before the facial edema and eosinophilia appeared. An X-ray film of his chest had the appearance of active tuberculosis. He also developed otitis media and tenderness over his mastoid.

It is interesting that no trichinae or collections of eosinophiles were found in the lungs at autopsy.

One of the hams was obtained and was found to contain one to four trichinae per low power microscopic field. Using the technique of Bachmann,[1] the trichinae were separated from portions of ground ham by digestion with artificial gastric juice, followed by repeated washings with water. The trichinae were then dried and powdered and extracted (1:100) with Coca's solution. This extract was injected intradermally into four living children and examined after twenty minutes, one hour, five hours, and twenty-four hours. The extracting fluid was used as a control in the children. Two adults were injected with the extract and the extracting fluid as additional controls. The results of the tests are summarized in Table II. The appearance of the reaction was very similar to that of a positive tuberculin reaction. It will be noted that in three of the cases the test was strongly positive in at least one of the readings, but only moderately positive in the fourth case, and then at two and one-half hours. With the exception of the controls just mentioned, no effort was made to determine the specificity of the skin reactions.

TABLE II

Time after injection	Robert		Frances		Fannie		Ola Mae		Control 1		Control 2	
	test	control	test	control	test	control	test	control	test	control	test	control
20 min.	++++	0	++++	0	++	0	0	0	±	0	0	0
1 hr.	++	0	+++	0	+	0	0	0	0	0	0	0
2½ hrs.*	.....	.....	.....	.....	.....	.....	++	0	.....	.....	.....	.....
5 hrs.	+++	0	++	0	++	0	+	0	0	0	0	0
24 hrs.	0	0	++	0	++++	0	0	0	0	0	0	0

*Not recorded except in case of Ola Mae.

The precipitin test of Bachmann was also performed, using the same antigen (as in the intradermal test) overlaid on the sera of the same four children. The results of these tests were not conclusive because of some precipitation in the controls. Further tests were prevented by the small quantity of available antigen.

Summary

1. The more important clinical and pathological features of trichiniasis are reviewed briefly.

2. Five cases of trichiniasis occurring in one family are presented.

3. The source of the outbreak was an uncooked ham which was found to have one to four trichinae per low power field.

4. Intradermal tests, after the manner of Bachmann, with an extract of dried trichinae digested from the ham, were positive in the four surviving cases.

5. Should its specificity be proven for humans, further use of the skin test might eventuate in sufficiently early diagnoses to make catharsis and oral and intravenous anthelmintics efficient remedies for this disease.

6. Trichiniasis is probably far more common than is commonly believed. Certainly one and probably three of the milder cases would not have been diagnosed had not the other two been severe and typical.

7. It should be emphasized that trichiniasis may be readily confused with dysentery, bronchitis, acute asthma, pneumonia, early poliomyelitis, acute pulmonary tuberculosis, early osteomyelitis, early rheumatic fever, nephritis, meningitis, typhoid fever, and polyserositis.

8. Treatment with tartar emetic, after the manner of Grove, was definitely not helpful.

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REPORT OF NINE HUNDRED CONSECUTIVE ABDOMINAL OPERATIONS.*

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Some time ago the writer published the records of his first few hundred cases of abdominal surgery. He then had in mind the continuance of this course from time to time for the information of his friends, for any statistical value such a course might have in giving a cross section of the type of surgery met with in small general hospitals, as well as for the information of those who wish to know the kind of work a community is receiving, whether it be good or ill.

In casting about for a fitting subject of a paper to be read before this society, the writer

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felt that he could do no better than submit an amplification of these reports. He wished to present something different from his average medical paper, to get away as far as possible from the banalities of limited case reports, featuring only items of favorable import, which rarely reveal anything of direct value concerning a surgeon's average work or worth.

With the exception of a number of herniopplasties done in a munition plant hospital during the war days, the records of which are not available, but in which there was no mortality, this paper contains the complete record of all the abdominal surgery ever done by the writer up to July 15, 1931. The omission of the above mentioned unrecorded work increased slightly the writer's mortality rate, but for better or for worse this paper is a surgical confession and as such is probably unique in the history of this society.

Operations noted here are consecutive. They were taken as they came, prepared for operation as best they might be, and none were refused operation when such a course seemed indicated.

Listed below are infants and those who had passed the allotted span of human life, many others who were in desperate straits from toxemia and infection, while not a few were the victims of traumatisms, all of which carry such well known operative hazards, that it is futile here to enumerate them.

These operations were done in the Petersburg, Hopewell, and Central State Hospitals, and are there recorded.

Listed below will be found:

Cases	*Deaths*	*Per cent*
158 Acute appendicitis — catarrhal, suppurative, gangrenous	0	0
34 Appendiceal abscess	2	5.88
32 Diffuse peritonitis of appendiceal origin	6	18.75
58 Chronic appendicitis	1	1.7
Total of 224 cases of acute appendicitis, appendiceal abscess, and peritonitis.		
Total mortality of these three groups		3.61
Total of 282 abdominal diseases arising from the appendix.		
Percentage of total mortality arising from the appendix		3.33
164 Gonorrhoeal salpingitis with all pathology arising therefrom	3	1.8
8 Cholecystostomy	0	0
7 Cholecystectomy	2	28.6
7 Ovarian sclerosis	0	0
74 Hernias of various kinds	2	2.74
6 Mechanical obstruction of intestine	3	50.
4 Intussusception	1	25.
3 Perforating duodenal ulcer	1	33.33
10 Retroflexed uterus	0	0
1 Rupture of the liver	0	0
1 Rupture of the sigmoid	0	0
10 T. B. peritonitis	0	0
1 Gastrostomy	0	0
13 Caesarean sections	1	7.7
1 Endothelioma of ovaries in 7-year-old child	0	0
6 Exploratory, mostly for traumatism	0	0
62 Hysterectomies for fibroids	2	3.22
1 Toxaemias of pregnancy (freeing of adhesions)	0	0
24 Ovarian cysts	0	0
15 Ectopic pregnancies (13 ruptured, 2 unruptured)	0	0
7 Gunshot wounds of abdomen	4	57.14
2 Gunshot wounds of abdomen and thorax combined	2	100
1 Stab wound of stomach	1	100
1 Gastric ulcer	0	0
1 Acute pancreatitis	0	0
188 Sterilization of feebleminded with removal of appendix in practically all cases, as well as any other existing pelvic pathology	0	0
Total of 900 cases operated on.		
Total operative deaths		31.
Percentage of total mortality		3.44

The urge to explain some of these deaths is well nigh irresistible, but such a course would perhaps be tiresome, certainly time-consuming, so the writer will content himself by stating that more than one-third of this mortality is represented by those who had passed threescore years and ten and by abdominal traumatisms. It should not be forgotten that many patients die in spite of operation and not as a result of such a procedure. It is manifestly unjust, in cases of ruptured intestines and in strangulated bowels, particularly in the aged, all of which are uniformly fatal without operation, to assess a surgeon with a high mortality rate when he operates and saves from 40 to 60 per cent of these patients. But such is our present method of classification.

After all, what do statistics such as these mean? They mean absolutely nothing of note to the writer or any one else, unless they measure up with the best the country affords. Warbasse states that the mortality from diseases of the appendix of all forms in the hands of experienced operators, range from 2 to 7 per cent. Some surgeons have 100 cases representing all kinds without a death.

In his tenth edition of Surgery, just off the press, Da Costa reports 100 cases of grave acute appendicitis operated on by himself,

Keen, and Hearn, with eight deaths—8 per cent cent mortality.

He cites Burgess' 500 consecutive operations with forty deaths—8 per cent mortality. In this series of 500 cases, when infection was limited to the appendix, the mortality was .75 per cent (135 cases); when there was circumscribed abscess, it was 4.64 per cent (213 cases): when there was diffuse spreading peritonitis, it was 19.07 per cent.

By the anoci method, Crile has been able to reduce his deaths to only two in 391 cases of acute appendicitis, with and without peritonitis, with the addition of narcotization in the very severe cases. This is .51 of 1 per cent, and is the best report on combined diseases of the appendix the writer can find; but unfortunately it is not specific.

Deaver reports 566 cases with an aggregate mortality of 5 per cent. In abscess about a necrotic and perforated appendix it was 12 per cent. In cases of diffuse peritonitis, the mortality rate was 31 per cent.

Coffey in 1906 collected 13,445 reports of operations for acute appendicitis with a mortality of 7.4 per cent.

According to H. C. Lowe, the death rate from appendicitis in the United States is over 10 per cent and is increasing. These reports might be multiplied indefinitely but their tenor is all the same.

The writer selected appendicitis with its associated pathology for comment because it is always with us, in all of its portentious manifestations; and because it is always the largest factor in any general surgical record; and because a knowledge of the peritoneum and the handling of peritonitis is perhaps the best known gauge of a man's ability as an abdominal surgeon.

The postoperative treatment of these cases has been the simplest possible. As a rule nothing is prescribed except fluids and rest, rest being assured by ample morphinization for the first few days. The maxim for postoperative cases should be: "Give them fluids and let them alone." This cannot be emphasized too strongly.

Fluids are given by the rectum, under the skin, and by mouth, when tolerated. Only cases of severe shock or marked dehydration are given fluids intravenously. Any intravenous solution is liable at times to produce a severe reaction, or create trouble in some other form, regardless of care in preparation or administration. Furthermore, "Water given intravenously is rapidly eliminated from the body. Water absorbed through membranes or tissues is retained in much larger amounts. Water, to be most useful, should have a biologic pass."

Unless a patient is practically moribund on admission, or is rendered so on the operating table, the above simple treatment is usually ample. When either of the above conditions are encountered, emergency measures are of course imperative.

Heroic postoperative treatment is generally an apology for poor surgery. This should be guarded against as far as possible by a careful preoperative appraisal of the patient's resources and by proper preoperative treatment, followed by operative measures designed therefrom to safeguard the patient's vitality. It is here in these desperate cases that good judgment, speed, skill, and precision on part of the surgeon are often the patient's only chance of life. Under any circumstances, prolonged anaesthetics and operations are deplorable. It has been proven by phenolphthalein excretion that kidney function is often impaired in direct proportion to length of etherization and operation, even to the point of complete suppression. Other vital centers suffer in unison, and the toxic and debilitated patients too often fail to make the grade.

Appendiceal and other abscess cases have been opened and drained. Never has the writer dug an appendix from an abscess wall. If the appendix is free, or accessible without undue traumatism, it should be removed; but adhesions should not be broken down and infection spread in order to secure an organ that is no longer the principal pathology. It is here removed solely to prevent future trouble.

In case of ruptured appendix with diffuse peritonitis, unless the condition of the patient prohibits, this organ should be removed. If the peritonitis is far advanced and the patient's condition desperate, merely drain, or else follow Oschner's advice and treatment for these cases and do not operate until localization of infection takes place. All cases of diffuse peritonitis, in addition to removing or closing the focus of infection, when deemed advisable, have been treated by incision, limited drainage, Fowler's position, Murphy's drip, and morphine.

No drugs or enemas of any kind are used to secure bowel action.

Food by mouth is prohibited until peristalsis is re-established. Water by mouth is allowed when tolerated.

In most cases this is surprisingly early and entirely harmless.

It is trite to remark that anyone doing abdominal surgery has grave responsibilities to shoulder. Perhaps the greatest task of all is deciding what is to be done with a doubtful case. Here the Golden Rule is the only rule to follow. Such a course does not amplify an operative record, nor does it gather in the shekels; but it does maintain the integrity of the profession and the surgeon's self-respect.

The surgical attitude toward disease, of attack, attack, attack, encountered at times, is, to phrase it mildly, merely a form of operative mania. Surgical problems are not so simple that they can be solved by any one course of action. Surgical procedure grades from watchful waiting through palliative measures, on to operation for radical cure. No one of these is of sufficient importance in itself to be called surgery. It is just as important at times not to operate as it is at other times to operate. For instance, it is highly radical to operate on a case of postpartum infection, and equally radical not to operate on a case of suspected ruptured intestine.

Being human and subject to all the limitations such a statement connotes, the writer disclaims any idea of preaching, in calling attention to the perfectly obvious and often stated fact that there are entirely too many ill-timed, radical, and destructive operations being done, which often leave the patient dead, crippled or otherwise jeopardized for the rest of his life, and which require the minimum of skill or knowledge to perform. Particularly is this true where extensive surgery is done in the face of acute infection. Such work is unsurgical, is done every day, leads inevitably to a high mortality, and cannot be too repeatedly or too severely condemned.

It is futile for the average man, or any man for that matter, to expect to do good surgery without a certain degree of respect for the precept and example of our outstanding leaders in this specialty, and without a thorough grounding in the basic medical sciences, fortified by a comprehensive knowledge of surgical principles, all based on a character rigid enough to back his own judgment. After all is said and done, good surgery depends almost entirely on good judgment. This is developed, never created, by intense study, keen observation and experience.

In closing, a quotation from a recent article by Cushing seems appropriate. "Surgical judgment, indeed, is more or less an inspirational quality which is variable and elusive, all surgeons being conscious of having it in hand on some occasions, of losing it on others.

"It is a good deal like a game which even the best and most consistent player foozles for some unaccountable reason at certain times. It may be likened without being trivial to a form of major sport, which is played against an invisible but utterly relentless antagonist, quick to take advantage of every misplay and faulty move, and when the time comes to make public one's score, it is done somewhat apologetically, but with the expectation that others may profit by it, and with the assurance they will come to improve upon it."

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DISCIPLINE IN TUBERCULOSIS.*

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It is generally known that the three cardinal principles in the treatment of tuberculosis are rest, food and fresh air. It is also apparent that few among those outside the medical profession and, I am sorry to say, not such a great number in the profession, appreciate the relative value of the three. If rest were popularized as the cardinal principle, I am sure better results would be obtained toward the eradication of the disease. The application of the factors involved, however, rather than the factors *per se*, is the purpose of this paper.

We know that intelligent advice to the patient and the patient's family constitute the greatest service of the physician in handling a case of tuberculosis. Drugs are palliative only. Surgery is of great value in selected cases, but

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is applicable to relatively few, and then must always be followed by the same management as in non-surgical cases. The burden of obtaining a cure of tuberculosis is distinctly upon the patient, and in order that his efforts be directed in the proper channels he must receive explicit instructions from his doctor.

It is generally conceded that sanatorium treatment offers the easiest and most satisfactory method of getting the proper start toward securing an arrest or cure of tuberculosis. But all patients cannot have the advantages afforded by a sanatorium, and many must attempt the cure at home. So, whether in the sanatorium or at home, the question is the same. How must the tuberculous patient be instructed and what are the methods of discipline conducive to the best results?

The road to recovery is hard, long and tortuous and it is almost beyond the powers of the most stalwart, either within or outside of a sanatorium, to adhere rigidly and at all times to the course outlined for him. It is, therefore, necessary that the form of discipline employed by his doctor be effectively applied. For the doctor must be the disciplinarian.

It has been my privilege to have been intimately associated with all of the Virginia State Sanatoria and several outside the State, notably among the latter being Trudeau Sanatorium at Saranac Lake. This association has enabled me to fairly accurately evaluate the varying methods employed. The methods in each differ in certain particulars, but there are only two radical differences in approach to the problem.

These differences depend to some extent upon the number and type of patient in the institution and the attitude of mind of the management. In municipal sanatoria, especially when the number of patients is large and made up from individuals in all walks of life, it is often—usually, I might say—a matter of "obey the rules or get out." The attitude is assumed that the rules are made for the benefit of the patients, as are the specific general orders for each individual, and the patient who is so little interested in his own welfare as to disregard the rules does not deserve the time and patience of the management. He should make way for a more conscientious sufferer.

The other viewpoint, and the one more often assumed by private institutions, is this: The rules are made for the benefit of each patient. Each patient pays for the advice he gets. If he does not wish to get his money's worth or to get the maximum results by following the rules, then no one is hurt but himself. There is, of course, much to be said for both methods and, as is usually the case, the ideal solution is neither the one nor the other, but somewhere between the two.

Rules mean nothing to the average patient unless he knows it is to his advantage to obey them, and therein lies the secret of effective discipline. The reason for most breaches of discipline is the patient is either thoughtless or he is not fully convinced that the rules are beneficial, but like the small boy he adopts the attitude that rules are framed but to plague him and to restrict his liberty.

The group psychology of the average patient body is very similar to that of a group of school children. To them "playing hookey" is a lot of fun and does no harm unless they are caught. The thought, then, to instill into the mind of each patient, is this: When he breaks a rule he is not getting away with anything. He is only lessening his chances of recovery. On one occasion a patient, quite disgruntled, approached me in this manner: "Doctor, I feel fine and am tired of staying in bed all night and all day long. I want some exercise." I replied, "All right, take all you want. It will not bother me or anyone else." In great surprise he said, "But is it all right?" I replied, "Sure, it's perfectly all right. It simply means that you will not get well as quickly, and possibly not all. But I would also advise you not to stay here. It's quite all right with us if you do, but it seems foolish to pay for advice that you don't take." The man's whole outlook changed. He did not take exercise until it was advised and was in other respects a model patient, whereas, until that time he was chronically dissatisfied. I have also spoken to many other patients in a similar way and with equally good results. It is, of course, preferable to give the patient the proper instructions and the reason at length for them at the time he starts the "cure," but failing in this the above procedure is quite effective.

I do not wish to convey the idea that there should be no inviolable rules. Every institution must have certain regulations, breach of which should incur speedy dismissal. But such rules should be very few and limited to

gross misconduct or behavior that harms others or lowers the morale of the institution. Every sanatorium has on occasion the misfortune to admit a constant trouble-maker. Such a one can and often does destroy the morale of a large group of patients, and when his trouble-making tendency is discovered he should be dismissed as promptly as possible.

In state sanatorium practice I have heard several different patients express their reason for going to a state institution rather than a private one in somewhat these words, "I came here rather than to a private place because here they make you toe the mark. In those expensive places you pay a lot of money and do what you please. That's no way to get well." At that time I did not fully appreciate the injustice and absurdity of such an indictment. In this connection, I need only say that as a general rule in all sanatoria, State, municipal and private, it is the patient who is having his charges paid by someone other than himself who gives most trouble.

If patients can be convinced that the chances of a cure are in direct proportion to the rigidness with which the prescribed routine is adhered to, the job is made much easier for all concerned. It will not do to assume that the patient knows this fact.

I have in mind a certain pavilion at one of our Virginia Sanatoria. This building has two wards separated by intervening rooms. The patients on one ward took pride in adhering strictly to the rules and following the doctors' orders implicitly. A patient who fell short in any particular was immediately "jacked up" by the others. A certain spirit prevailed which made that ward the pride of the sanatorium. The other ward, though under the same roof, was entirely different and the patients there were constantly causing trouble. It required the observation of but a few months to note the vast difference in results. Many expedients were attempted to bring the morale of the "bad end" up to the standard of the other one. Patients were shuffled from one ward to the other. The worse offenders were dismissed. But the "good end" remained good and the "bad end" bad. An intangible something that can only approximately be defined as "spirit" kept the situation unchanged. Had both groups got off on the right foot as did the one, the difficulty might have been obviated.

It is my opinion that we sanatorium men as well as practitioners take too much for granted in dealing with the tuberculosis patient. When a man goes on the cure everything is new to him. He can only learn from the doctor and his fellow patients, and he is more likely than not to follow the example of the latter. Thus, each patient should be initiated into sanatorium routine by receiving a heart to heart talk by the physician in charge. The doctor should explain the reason and necessity for the regulations governing the sanatorium as a whole, and the specific orders that will be given to the patient himself. The whys and wherefores should be carefully gone over, the detail of the talk necessarily depending on the type and intelligence of the particular patient. In addition to the initial talk, subsequent informal discussion and talks both between the doctor and the individual and from the doctor to a group of patients should be the rule.

Although specific knowledge of tuberculosis may be harmful in certain instances, it is my firm belief that a general knowledge of the reasons for the rules governing a patient on the cure, by the patient himself, is conducive to far better discipline than may be had otherwise. It is hardly reasonable to expect a patient of ordinary intelligence to blindly follow instructions that have no meaning to him. On the contrary, well instructed patients who have yielded themselves unreserveredly to rules, the advisability of which they understand and approve, will, when they return home improved, so order their lives that the period of home cure will be appreciably shortened.

So much for sanatorium discipline. What about home discipline for the tuberculous patient? Of this little need be said. If discipline in the application of the thoroughly tried principles of treatment obtains results at well conducted sanatoria, superior to ordinary home cure, then discipline in the home should by all means be applied to such cases as cannot be hospitalized. This puts it squarely up to the doctor. Upon him rests the burden of making the patient and those responsible for his cure see that "the law (of cure) be taught and the reason thereof" and hold them rigidly to it by the method which many an old family doctor has long had at his command. If the patient has confidence in the doctor and the pa-

tient's attendants have the average amount of gray matter, the same sort of heart to heart talk outlined above will produce results, and the reading of the "riot act" when necessary by the doctor will prove as effective as it ever did.

It will be understood, I hope, why I have not specifically defined what the rules for taking care of a tuberculosis case are. These, of course, vary with the type and amount of disease present in the individual and with other factors pertaining to institutional or home management. In as specific a way as possible they have been ably set forth by others. I do wish to emphasize the necessity of getting the will of the patient behind the rules necessary.

The issues of life and death hang in a thorough understanding and application of discipline in the care of tuberculous patients If I have helped in any way toward a better understanding of its import, the reading of this paper will not have been in vain.

OBSTETRICAL ANESTHESIA IN COUNTRY PRACTICE.*

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My subject today is one which I think is of interest to all physicians doing country obstetrics.

The city physician with hospital facilities is not considered in this paper, as he has assistants and apparatus at his call to use any number of anesthestics in his obstetrical cases.

Our greatest desire when called to an obstetrical case is to accomplish or assist the delivery with the least amount of suffering to the mother and no harmful results to the baby.

There is at present no anesthetic which will give us a painless child birth, and probably never will we find one; however, in considering an anesthetic we must consider several important points, as follows:

1. The mother's safety during and after the anesthetic.
2. The baby's safety during labor and after birth.
3. The place and condition where we use the anesthetic.
4. Will it relax the perineum and prevent deep lacerations.
5. Will it prolong labor.
6. Can we control it at all times.
7. Will the cost be small.

Could we find an anesthetic which would fulfil all these it would be 100 per cent, but we cannot, so must try to come as near to it as possible. We try to use some aid in the first stage to ease the patient and give her confidence to carry on through the procedure. The best here is morphine sulphate, gr. ¼, and sodium amytal, gr. iii, repeated as needed.

I will now take anesthetics used and discuss them as to use in country practice.

"Twilight sleep" (morphia, gr. ¼ and scopolamine, gr. 1/200) has been and can be used in the hospital, but not in the country because it cannot be controlled without trained help to give repeated doses of it. Statistics estimate from its use an increased infant mortality of 1 to 2 per cent; labor is often prolonged in the second stage, causing an increase in instrumental deliveries, thus lacerating mother and endangering baby, and the patient often has to be restrained by mechanical means; so, of late years, this has been discarded by most good obstetricians even in hospital practice. Gwathmey's method of rectal anesthesia is very popular in hospital work, but is not practical in the country on account of expense, considerable amount of apparatus needed and a nurse to watch the patient; also, it cannot be controlled at home, and after it is given we can only wait and hope all will be well.

Spinal anesthesia will not do in the country, because the technique of administration is difficult. Position of the patient after the injection is given has to be thoroughly understood or you will get a failure or even a fatality; the duration is too short to be of much use in the first stage, and we cannot control it after it has been given. Often there follows a prolonged labor, for it relaxes the abdominal muscles so they do not help expel the foetus. In the country we have likewise no one to check the blood pressure and pulse of patient.

The gases, ethylene and nitrous oxide, I will touch lightly, as they are not practical for our use. Ethylene is highly inflammable if used near an open lamp, which most of us are accustomed to use in our work. Nitrous oxide needs a trained anesthetist, expensive apparatus, is expensive, and does not relax the patient as does ether or chloroform. Ether is claimed by some authorities to be the best anesthetic most easily adapted to all occasions. I differ from them for the reasons that ether

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gives off an inflammable vapor which may explode by lamp light; it causes nausea and vomiting which are liable to bring on post-partum hemorrhage; there is more danger of pneumonia, the bulk is greater, action slower, reaction longer, relaxation less complete in as short a time, and is not as easily controlled as chloroform.

Chloroform in my humble experience and opinion is the best anesthetic for the country physician, in respect to the points I mentioned at first—safety to the mother, safety to the baby, use at any place since it will not explode, will relax the perineum, can be easily controlled, has small bulk and cost, and anyone can administer it with drop bottle, or patient can hold inhaler to her own nose, dropping it when she relaxes enough.

I base my belief on 339 cases on which I have used chloroform as anesthetic in the past five years. Reviewing these, I find one maternal death; patient had what looked to be a cerebral hemorrhage after giving birth to a hydrocephalus baby. Therefore, I did not blame the chloroform. Having had only one death in 339, I think it safe for the mothers, as I have followed them closely in many cases for four or five years after delivery. Eight of the babies were still-born, so I consider it safe for the babies.

I use chloroform entirely in the second stage, morphine or sodium amytal in the first.

Start chloroform at the beginning of second stage and gradually increase amount until we have complete relaxation when the head reaches the perineum; then the head can be delivered between pains, or an episiotomy done if necessary. The patient is not conscious of the head passing over the perineum.

Now, if the pains lag under the anesthetic, I use 3 to 5 drops of pitocin, controlling the pains with my hand on perineum, and increasing or decreasing chloroform.

The perineum is usually relaxed, as I have had few bad tears even in primipara. The anesthetic can be stopped at any time, and is easily controlled. The patient reacts easily, with no nausea or vomiting and no shock. Babies cry almost at once, with little resuscitation and, in my observations, no after-effects. Therefore, as I said before, in my opinion chloroform is the best anesthetic for the country physician.

DIABETIC COMA—A REPORT OF TWENTY-TWO CASES.*

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This is a survey of twenty-two patients with severe diabetic acidosis who were studied in the Hospital Division of the Medical College of Virginia in the last four years. The usual clinical and laboratory criteria were considered in establishing the diagnosis and we feel relatively certain that these cases are typical of the acidosis occurring in diabetes. There were, however, in certain of the cases, complicating factors which apparently had marked effects on the prognosis.

Notwithstanding the marked improvement in the handling of the diabetic patient since the advent of insulin therapy, diabetic acidosis is still a serious problem. For that reason the diabetic patient should always be under close surveillance and should be advised and forewarned accordingly. In general, acidosis develops for three reasons: (1) dietary indiscretion, (2) the omission of insulin, or (3) the onset of infection. The physiological disturbance that ushers in the coma symptom-complex is not entirely clear. In general there is an increase in the blood sugar, a reduction of the carbon dioxide combining power of the plasma, and an increase in the ketone bodies of the blood and urine. Coma may occur, however, when at least one of these findings is normal. Lemann, Oliver, and Evans have all reported cases of diabetic coma in which acetone bodies were not demonstrable in the urine. On the other hand, the blood sugar may be very high (1,710 mgs. per hundred c.c.) without the advent of acidosis. At any rate, the occurrence of coma is the end result of a profound metabolic disturbance in which fatty acid intoxication and hyperglycemia are the rule rather than the exception.

In analyzing our case records we find the usual symptoms and signs occurring. Weakness, nausea, vomiting, headache, and increasing drowsiness were the principal complaints. Two patients complained of severe abdominal pain, so severe that an acute surgical emergency was suspected until the true state of affairs was determined. The physical phenomena encountered on examination were also characteristic. Dehydration, soft eyeball, and Kussmaul respirations, were noted in most of

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the cases. The body temperatures in this series were not markedly reduced. The highest temperature recorded on admission was 99.6 degrees F. and the lowest 96.8 degrees F. In half of the cases there was a note that the observer detected the odor of acetone on the breath.

The laboratory findings in all of our cases were essentially true to type. The blood sugar was in every instance elevated; the urine showed marked glycosuria and ketonuria invariably, and the carbon dioxide combining power was uniformly very low except in four instances where the determination was made several hours after treatment was instituted. The average leukocyte count on admission was 13,500, varying from a low of 4,400 to a high of 24,200. In twelve patients, the count was over 10,000. In the favorable cases the counts returned to normal as soon as the dehydration was relieved.

The essential principles of therapy were the treatment of shock, the administration of fluids and the use of insulin in frequent doses. Gastric lavage was employed especially in the cases in which vomiting was present. We believe it to be an extremely valuable adjunct in treatment. It rids the stomach of undigested and partially digested residue and enables the patient to retain food and fluids much sooner than otherwise would be the case. Aspiration of the stomach also reduces the size of the distended organ which in the dilated condition may interfere with respiration.

Inasmuch as dehydration was such an important factor in the production of the clinical picture, attempt was made to restore the fluid content as rapidly as possible. Glucose in 5 per cent solution was given intravenously in amounts varying from five hundred to one thousand c.c. twice or three times within the first twenty-four hours. Frequently after the first administration the patient became conscious to the extent that fluids might be taken by mouth, and from then on fluid regulation was much easier. The amount of insulin used was variable. The largest amount given in this series was two hundred and fifty-five units in twenty-four hours, while the smallest was eighty units in twenty-four hours. Our method is to give from twenty to fifty units intravenously on admission and follow with thirty units every hour for three or four doses. No definite rule can be stated—each case requiring

TABLE I

Total No.	Average Age	Oldest	Youngest	Males	Females	White	Colored
22	34.7	52	6	6	16	14	8

TABLE II

Total No.	Total No. Deaths	Per Cent	Coma Alone	Per Cent	Coma with Complications	Per Cent
22	8	36	2	9	6	27

TABLE III
FATAL CASES

Name	Age	Sex	Race	No. Hrs. in Coma on Admission	Blood Sugar	Co_2 Vols. Per Cent	Complications	Time in Hospital
L.G.	52	F	W	?	530	10	Pul. Tbc.....	5 hours.
F.G.	6	F	C	36	380	.....	.....	8 hours.
S.T.	45	F	W	36	480	11.8	Abcess of Leg.....	16 hours.
B.M.	7	F	W	12	540	13.5	.....	17 hours.
R.M.	38	F	C	8	450	39.2*	Gangrene of right foot and leg.....	12 hours.
A.H.	50	F	W	24	410	34.2*	G. U. Tract infection..	7 weeks.
M.J.	53	F	C	24	330	16.4	Mycocardial insuffiency.	12 days.
P.M.	50	F	C	6	540	.....	Cerebral Hemorrhage..	6 days.

* Determination made after treatment was begun.

a different amount. When the patients became sufficiently conscious to take fluids by mouth, they received a carbohydrate-containing liquid, usually orange juice sweetened with a small amount of cane sugar. This was mixed so that each six ounces contained twenty-five grams of carbohydrate. It was given every two or three hours. Insulin in the ratio of one unit per gram of carbohydrate was administered at the same time. We realize that there are those who oppose the administration of carbohydrates in large amounts, but we believe the furnishing of food, and the restocking of glycogen-poor tissues are useful therapeutic aids.

In general, the disappearance of acidosis was noted in the laboratory examinations before it was detectable clinically. Ketonuria had usually decreased and the carbon dioxide combining power of the blood had increased hours before the patient's drowsiness and air hunger had perceptibly lessened. The reason for this phenomenon is that time is required for the restoration of normal physiologic function even after the causative factors of acid intoxication have been counteracted.

The mortality rate in our series, when one considers the total number of deaths, is quite large. As may be seen from Chart III, there were eight deaths out of a total number of twenty-two patients. Of these eight, however, only two died from uncomplicated coma. In three patients death occurred after the clinical and laboratory phenomena of coma had disappeared, as may be noted in the chart. These patients apparently succumbed as the result of infection in the genito-urinary tract, myocardial insufficiency and cerebral hemorrhage, respectively. Three other cases had as complicating factors pulmonary tuberculosis, abscess of the leg and gangrene of foot and leg. These patients all died within a short while after admission. The two apparently uncomplicated fatalities occurred in children. They had both been in coma for relatively long periods of time, and this, of course, is of serious import as far as the prognosis is concerned.

Unfortunately, permission for necropsy was obtained in none of the fatal cases. As Joslin has so aptly stated, diabetic deaths often cause us to lose faith in insulin until post-mortem findings show the hopelessness of the situation and renew our confidence in this most valuable therapeutic agent. It is probable, at least, that some of our deaths may be explained by the occurrence of some unrecognized or unrecognizable pathologic lesion that would entirely vitiate the normal usefulness of the extract of the Islets of Langerhans.

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THE ETIOLOGY AND TREATMENT OF ENURESIS.*

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The fallacy of selecting certain etiologic factors and inaugurating a specific course of treatment for the cases of enuresis coming under our observation becomes more apparent when this condition is carefully reviewed.

No condition, in my judgment, presents as vague a picture as the average child with enuresis, and no condition, common as it is among children, can cause as much mental distress both to the parent and child.

In reviewing the literature it is very difficult to present this subject in a brief and concrete fashion; however, in considering the etiology, Wylder, in the *Medical Journal and Record*, March, 1926, makes this enlightening statement: "In the first place enuresis is not a disease but is only a symptom that may be caused by many conditions of widely divergent pathology and much that has been written that seems to be almost contradictory is absolutely correct, for the different authors are describing different cases with entirely different causations."

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I consider enuresis to be satisfactorily divided into two classes, enuresis vera and pseudo-enuresis.

Adrien Bleyer, in *Am. Jour. Dis. Children*, November, 1928, defines enuresis vera as that type of enuresis in which dissociation between the brain and the voluntary nervous system, as concerns the *physiology* of *micturition*, actually appears to exist, while pseudo-enuresis is reserved for that type of defective control which can be relieved by measures designed to influence the will or to obtain the cooperation of the child.

It is somewhat difficult in some cases to draw a line of demarcation between enuresis vera and pseudo-enuresis. We know from experience that the average case presents no tangible anomaly or infirmity, definitely causative in nature.

Anatomically there seems to be a vesicular atony, involving the sphinchter, which could be reasonably based on a neurosis. This anatomic or physiologic peculiarity does not reside external to the orifice of the bladder. Enuresis in effect, therefore, would be a disturbance of the physiology of micturition, due to a disturbance in the bladder itself, which places it beyond the control of the will.

Under the heading of enuresis vera I might mention the following causes—cystitis, renal or vesical calculus, adherent prepuce, balanitis, phimosis, epispadias, hypospadias, narrow-meatus, pin-worms, anal fissure, rectual polypus, vulvo-vaginitis, adherent clitoris, skin diseases, syphilis, tuberculosis, alteration of the thyroid or pituitary gland, urethral stricture, congenital anomalies of urethra, spina bifida occulta, dysenteric ulceration, and chronic congestion of the lower bowel, as also endocrine disturbances, such as cretins, congential myxodema, mongols and other types of idiocy. Likewise vesicular atony, neurosis, either unstable or undeveloped nervous systems that interfere with the cerebral control over the spinal center must be considered. This deficient cerebral function is expressed by the failure of the reflex which contracts the urethral sphincter when the vesical tension enters into action. Other conditions that might be mentioned are anemia, malnutrition, inherited nervous constitution, chorea, epilepsy, hysteria, headaches, neuralgia accompanied by lack of tone of the vesical sphincter, highly acid, highly concentrated or highly alkaline urine and excretion of large amounts from excessive fluid intake, in addition to which we might add heredity such as alcoholics or epileptics, enlarged or diseased tonsils, and adenoids.

The age of the child is usually from five to seven years. Seasonal changes, such as midwinter, indicating the hygroscopic and barometric effect on the mechanism of micturition, hyperesthesia or hypoesthesia, hypertonia or hypotonia of the vesical sphincters are all to be borne in mind.

Under the heading of pseudo-enuresis I might mention the following causes—vagatonias produced by psychic stimuli, extreme nervousness and neurasthenia, and, lastly, habit, such as masturbation, etc.

To refresh our memories I might mention a few of the salient points in the physiology of normal micturition. While urine is accumulating in the bladder the organ performs rhythmic movements. These gradually increase in force until some urine is forced past the internal sphincter and then micturition takes places reflexly. The passage of a few drops of urine through the internal sphincter stimulates the sensory nerve-endings of the pelvic nerve; as a result, the sphincter of the bladder is reflexly inhibited, and the bladder muscles contract and void the contents. Micturition is therefore a reflex act, the spinal center for which is situated in the lumbar spinal cord. In infants urine is voided by the stimulation of the sensory nerve-ending of the pelvic nerve. After eighteen months or certainly by three years of age this reflex is under cerebral control unless this cerebral control is cut off by excitement.

Kerley mentions faulty development as a cause of enuresis, but states that in about ninety per cent of cases the cause is unexplained.

Abt mentions acid urine, alkaline urine, malformation of the bladder and urethra, epilepsy, spina bifida, spina bifida occulta, compression, myelitis, cerebral lesions, fistula and oxyuris.

Holt enumerates a continued infantile condition, anything increasing irritability of the spinal center, anything interfering with cerebral control over the center and anything increasing irritability of the terminal filaments of the bladder nerves.

Church and Peterson speak of it as a partial somnambulsim and as a physiological stigmata of degeneration.

White and Martin call it a functional disease of unknown cause.

Porter and Carter give as the principal cause, improper training, and the establishment of a neurotic habit.

Feer mentions faulty training, nocturnal epilepsy, juvenile hysterics, and considers it an evidence of a hereditary stigmata of degenerative inferiority.

Crozer Griffith discusses phimosis, preputial adhesions, adherent clitoris, vulvo-vaginitis, balanitis, renal calculus, rectal fissure, thread worms, adenoids, foreign bodies in the nose, vesical calculus, hyper-acidity and hyper-alkalinity of urine, malnutrition, anemia, chorea, epilepsy, headache, neurasthenia, hysteria, improper food or clothes, fright, excitement, thyroid insufficiency, fatigue, and too heavy bed covers.

This discussion of causes could be carried on *ad infinitum*, as every text consulted or every author reviewed brings out some new suggestions as to causation, which emphasizes the fact that there is not at the present time any very definite idea as to the cause or, rather, there is a general idea pervading the literature that anything that disturbs us either mentally or physically may give rise to this symptom.

I. J. Muldower, in *Archives of Pediatrics*, July, 1927, believes that enuresis has a definite relation to vagotonia, not the vagotonias of inferiors, but vagotonias who are not only normal but above normal. He mentions two children who developed severe attacks of vomiting when they started to school, so much so that it was necessary to keep them at home for sometime. Their progress on resuming school was brilliant. To my mind these children were vagotonics.

"You tell people shocking news, and with what results? Some will develop indigestion, others will faint, while still others will have incontinence of feces or urine, such stimuli as would hardly effect a non-vagotonic. The above illustrates vagotonic manifestations produced by psychic stimuli.

"Examples of vagotonia caused by manifest endocrine stimuli are shown by palpitation, tremors, flushing, etc., as in Graves' disease, and flushing, sweating, abnormal fear and nervousness as in puberty and menopause. Bearing the above in mind, may we not deduce that since in simple goitre and symptomless puberty and menopause where there are manifest changes in the endocrines, may we not also have vagotonic manifestations with presumed or latent disturbance of the endocrines?

"Peripheral stimulations are found in vaginitis, adherent clitoris, phimosis and pinworms."

Most of Muldower's cases showed frank symptoms of general vagotonia, in addition to which was local vagotonia. If what was said is true, we can easily understand why fear of the teacher, parent, or another child, reprimand; sensitiveness of its being superior or inferior in performing its tasks at school or play; and other minor irritations, mental and physical, of no consequence to the normal child, will so effect a vagotonic as to cause incontinence. The same holds true of children who are under school age. So much for enuresis diurna.

"To explain nocturnal enuresis we must not forget that, of all human beings, children are the most imaginative and hence are prone to dreams. Thus, dreams of a fight, or falling off the bed, of drowning, of being bitten by a dog, will cause nocturnal enuresis. These children will frequently be affected by very pleasant and excitable dreams. It is well known that when a normal child becomes feverish it becomes incontinent. This is explained first because there is irritation of the sympathetic nervous system, and, secondly, because such patients have dreams or phantasies. This, I believe, is the logical explanation of the modus operandi of enuresis."

Treatment

With the etiologic factors varying so greatly, it is so evident that views concerning therapy would be unsettled.

In every case the treatment must be guided by the most probable etilogic factor, after the elimination of which your attention should be applied to the general toning of the body, careful bland diet, avoiding coffee, tea, sweets, the usual fluid intake routine, fresh air, and avoidance of physical and mental strain. A moderately hard bed, covers not too warm, should be used, and mental excitement and late hours should be avoided.

For hypertonia, bromides and belladonna should be used, and some authorities are reporting excellent results from pituitary extract. For hypotonia, nux vomica or strychnia are advisable. Coillog, Rankowistich and Wertinghoff suggest massage of the bladder and electricity for toning up the vesical innervation. It is helpful to use psychic influence,

such as avoiding public exhibition, avoiding late hours, insisting on rest at mid-day with every precaution to avoid fatigue. Principal meal should be given at mid-day. Systematic and periodic emptying of the bladder is advisable. Careful cystoscopic and proctoscopic examinations are to be made if necessary.

Potassium citrate for highly acid urine, or dilute nitro-muriatic acid for highly alkaline urine are to be used when indicated. General tonic treatment with iron, arsenic, etc., is helpful.

The pasage of cold urethral sounds has been very successful in the hands of some authorities.

Systematic waking at night to prevent the bladder from becoming over distended should be practiced.

Education of the sphincter of the bladder by having the child, when he goes to urinate, practice the stop-start routine, as long as the urine lasts, educating and developing the sphincter muscles in this way.

Some authorities recommend the injection of saline solutions under the skin in the perineal and pubic regions, elevating the foot of the bed, discontinuing fluid after four P. M., encouragement and rewards.

Rewards in my experience, after the anatomic abnormality has been removed, and in cases when no abnormality was found, have been very successful, paying the child and taking it away for a dry or wet bed as the case may be.

Crothers, in *Clinical Pediatrics*, mentions in detail the customary method advised for enuresis in an out-patient department. You are all probably familiar with this. He states his great objection to the plan is that all the work is put upon the mother. A better way is to lift from the child the weight of exasperation and of emotion with which he has been surrounded, and teach him how to behave himself. In order to carry out the training plan, it is essential to make it easier to stay dry than to become wet. Instead of taking the child up at regular intervals, he suggests making the child get up itself, and when the bed is found wet, making the child get up half hour earlier, washing and drying its own bedclothes. He does not restrict water, nor does he restrict the diet, and uses no drugs. Rewards, but especially recognition of good work, are used at discretion. He states that he has used it in children from two and one-half years up.

Investigation of the intellectual level of the patient might be indicated.

Stimulation of the sympathetic nerves by applying pressure to any points of tenderness along the spine has been suggested. We might go on and find other suggestions, but this is sufficient to show that there is no uniformity of ideas as to treatment. This fact, however, stands out that belladonna or atropine are, or seem to be, the stand-by for all, or nearly all, cases; and yet, what does belladonna do, and how does it act?

Hare says it is eliminated through the kidneys almost as rapidly as it is absorbed from the stomach. If it is a sedative to unstriated muscles, does it not tend to relax the unstriated muscle of the vesical sphincter and increase the incontinence? And if it is excreted almost as soon as it is absorbed from the stomach, what local effect on the terminal nerve filaments can we expect if we get the child up frequently to empty the bladder, or if he empties it involuntarily in bed!

Paul Freud, in the *Medical Clinic*, November, 1925, reports a simple and harmless method which gave him good results. He based his treatment on Head's discovery that there is a reflex sympathy between the internal organs and those skin zones which derive their sensory nerves from the same segment of the spinal cord. On disease of an internal organ the corresponding skin zone shows hyperesthesia. Conversely, stimulation of such a skin zone causes hyperemia and, therefore, increased function of the corresponding organ. It was necessary to find a stimulus that would cause intense and long-continued hyperemia of the organ without injuring the skin. A degree of heat high enough for the purpose burns the skin. But intense cold applied to the skin for a little while causes long continued hyperemia of the organ. So he used ethyl chlorid on the Head's skin zone corresponding to the bladder in 23 cases of enuresis nocturna. The skin areas to which the cold was applied remained hyperemic for a long time. The bladder is innervated by the 2nd and 4th sacral segments; so the cold was applied over the sacrum and in a few cases just above the symphysis over an area as large as the palm of the hand. Generally one or two applications at intervals of 3 to 4 days were enough to cure the condition

which in 15 of 23 cases had lasted longer than 2 months.

In summarizing the etiology and treatment of enuresis diurna and nocturna, our natural deductions compel us to state:

1. So far, no single definite etiologic factor has been found to account for enuresis.

2. Stimulation of the sympathetic nervous system in vagotonics is an important factor.

3. No fluid should be taken after four P. M. A two to three-hour rest after the mid-day meal is essential.

4. Empty the bladder before retiring, and again at midnight.

5. Encouragement with gold star chart or money stimulates the subconscious control over the higher centers and strengthens the will.

6. Medicines have proven to be of no direct benefit.

Aside from anatomical and physiological abnormalities, I believe the large percentage of these cases are simply a habit condition, and with sympathy and encouragement, together with the proper regime and care, this habit can be broken.

Maury Place.

Miscellaneous

Practical Rules for Mental Health.*

1. Neither run away from emotions nor yet fight them. . . . It is like guiding spirited horses—you guide, they obey, not their own impulses, but your will.

2. Be efficient in what you do. . . . In short, do not drive your tacks with a sledgehammer. There is a better, less fatiguing way. Find out how easily you can do things well, and take pride in such skill.

3. Do one thing at a time.

4. Make clean-cut practical decisions. . . . Finally decisions must be valued, not as irrevocable oaths or unretractable contracts, but as mere decisions, subject to change in the face of new facts or additional knowledge.

5. Do not accept hurry as a necessary part of modern life. . . . Quality of work, not quantity, spells success, and quality is destroyed by hurry.

6. The worst enemy of efficiency, as well as the best ally of nervousness, is worry. Worry is a complete circle of inefficient thought whirling about a pivot of fear. To avoid it, consider first whether the problem in hand is actually your business. If it is not, turn to something that is. If it is your business, decide next whether it be your business now.

7. Keep work, play, rest and exercise in their proper relative proportions; not only in the space of decades, but year by year, month by month, week by week, and day by day. . . . Such a life absorbs emergencies without strain.

8. Shun the New England conscience.

9. Energy is often wasted by a peculiar process which many people seem to think necessary before they can do anything, especially anything that promises to be difficult. . . . When a decision has been reached, when something has to be done, waste no time in mobilizing extra energy, just do it.

10. Lastly, to avoid breaks in character, breaks between your ideals and your everyday actions, recognize that your problem is fundamentally the same as every one else's, no matter what your particular job may be. . . . Do not criticize your part in the play, study it, understand it, and then play it, sick or well, rich or poor, with faith, with courage, and with proper grace.

*Formulated by Austan F. Riggs, M. D., in "Just Nerves." See "The Normal Mind," by William H. Burham, Ph. D., page 671.

Child Tuberculosis and the Doctor.

The following points in tuberculosis control, stated by Dr. Roy K. Flannagan, Director of the Tuberculosis Out-Patient Service of the State Department of Health, are known to many physicians but are often overlooked in practice:

1. Tuberculosis is not killing as many people as formerly, but it is still recorded as the most fruitful cause of death.

2. Tuberculosis is surely infectious to intimate contacts. Tuberculosis, before it is known to be tuberculosis, breeds tuberculosis.

3. After infection has taken place tuberculosis is slow in manifesting itself, giving ample time for cure.

4. In every home in which there is or has been a recent case of tuberculosis, there are other latent cases always. Though slow it is sure.

5. These latent cases keep the disease alive in the community. They should be found.

6. It is possible to find early cases of tuberculosis, even in babyhood.

7. It is the duty of the family physician to find the child tuberculosis latent in the families in which he practices.

8. The discovery of latent cases by a physi-

cian in the families of his clientele is not difficult.

9. The tuberculin intradermal test for tuberculosis is simple and accurate.

10. The intradermal tuberculin test is made just as in giving the Schick test for diphtheria, by injecting intradermally (not subcutaneously) with a fine needle and a graduated syringe .1 c.c. of a 1 in 1000 dilution of Old Tuberculin and reading the reaction on the second day thereafter. If the reaction is negative, another injection of .1 c.c. of a 1-100 dilution is given for a reading after another forty-eight hour interval. If still negative infection with tuberculosis may be considered absent.

11. The reading and interpretation of the tuberculin reaction may be readily learned by those unfamiliar with it. A verbal description is inadequate, the reading must be demonstrated.

12. A positive tuberculin reaction in a child though definitely indicating infection with tuberculosis, does not necessarily indicate cause for alarm or need for extraordinary measures. It *does indicate* need for careful physical examination, for an X-ray diagnosis, for necessary corrective measures, for care as to diet and exercise. The parent should know all the facts, but the child should rarely be told that he is sick and he should not be treated as though he were, and certainly the public should not be informed. He should, however, be kept under medical observation until beyond puberty.

13. The tuberculin X-ray unit of the Out-Patient Service of the State Health Department is a demonstration and consultation service simply, and is at the service of physicians.

14. Physicians are urged to utilize this service as an aid in dealing more adequately with their own tuberculosis problems.

Should there be sufficient demand, tuberculin test material at moderate cost will be distributed by the Out-Patient Service to physicians who wish to test children in their practice.

THE MAN WHO WINS

The man who wins is the man who does,
The man who makes things hum and buzz.
The man who works and the man who acts,
Who builds on a basis of solid facts,
Who doesn't sit down to mope and dream,
But who humps ahead with the force of steam.
Who hasn't time to fuss and fret,
But gets there every time—you bet.

—*Selected.*

Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
PRESIDENT-ELECT—*Mrs. W. P. McDowell*, Larchmont, Norfolk.
SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
TREASURER—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

President's Message.

The American Medical Association convention will be held in New Orleans, May 9th-13th, and, of course, the Woman's Auxiliary will convene at the same time. A delightful program has been arranged and a cordial invitation has been extended by the hostess Auxiliary.

It will be a wonderful opportunity to see this historic old city. Many of the quaint customs and old homes of its early French settlers still remain and these give New Orleans a glamour and an atmosphere of romance different from any other city in America. We hope many will take advantage of this privilege and that Virginia will have a large representation.

Mrs. Hodges requests that any ladies who expect to go to New Orleans communicate with her AT ONCE, so she can send the Credential cards, etc., to them.

All ladies are invited to attend the business sessions and social functions regardless of whether they are delegates or not.

Many Auxiliaries report they have adopted the Study Program recommended by the National Auxiliary and find it gives zest and interest to their meetings.

We are glad to report that the new president of the Richmond Auxiliary, Mrs. Lee E. Sutton, has appointed Mrs. Joseph Bear as Program Chairman. She has planned a series of medical subjects to be studied and discussed at the monthly meetings. We need this "self-education," for, as a rule, doctors' wives are not well-informed and depend too much upon their husbands. Medicine, perhaps more than any other science, is making rapid strides and we must study to keep in touch with its wonderful developments. We hope other Virginia Auxiliaries will be inspired to do likewise.

Dr. William F. Drewry, Director of the State Bureau of Mental Hygiene, gave an address before the Woman's Auxiliary of the Richmond

Academy of Medicine on February 26th. The subject of his address was "Why Interest in Mental Hygiene?"

Preliminary Program
for
Woman's Auxiliary
to the
American Medical Association
Tenth Annual Meeting
New Orleans
May 9-13, 1932
Headquarters: Jerusalem Temple,
1137 St. Charles Avenue

Monday, May 9, 1932

6:00 P. M.—National Board Dinner and Pre-Convention Meeting (for Board Members, only), Orleans Club, 5005 St. Charles Ave. Tickets $1.50

Tuesday, May 10, 1932

9:00 A. M.—General Meeting----Jerusalem Temple
Mrs. Arthur B. McGlothlan, presiding
12:30 P. M.—Buffet Luncheon----Jerusalem Temple
Tickets $1.00
2:00 P. M.—Walk through Vicux Carre, with guides. Starting from the Patio Royale.
4:00 P. M.—Tea----------Patio Royale
8:00 P. M.—General Meeting of the American Medical Association----------Auditorium

Wednesday, May 11, 1932

9:00 A. M.—General Meeting----Jerusalem Temple
Mrs. Arthur B. McGlothlan, presiding
12:30 P. M.—*Auxiliary Luncheon, Southern Yacht Club
(12 minutes from Canal Street or Jérusalem Temple. Luncheon tickets, $1.50; transportation, 25 cts.)
2:30 P. M.—Post-Convention Board Meeting, Southern Yacht Club
2:30 P. M.—*Through Garden Gates; Glimpses of New Orleans.
4:00 P. M.—Teas in Private Residences.
New Orleans Country Club
8:30 P. M.—Divertissements in the Garden.
10:00 P. M.—Buffet Supper.
Negro Spirituals—Courtesy of the Woman's Auxiliary to the Louisiana State Medical Society.

Thursday, May 12, 1932

9:00 A. M.—General Meeting----Jerusalem Temple
Mrs. Walter Jackson Freeman, presiding
10:00 to 10:50, and
11:00 to 11:50—Special Round Table Conferences, Jerusalem Temple
12:00 M.—Buffet Luncheon-------Jerusalem Temple
Tickets $1.00
1:00 P. M.—*Trip to Oak Alley Plantation; visiting Spillway. Returning at 6:00 P. M. (Round trip, $2 per person)
or
2:00 P. M.—*Round trip over Lake Pontchartrain, via New Bridges. ($2 per person)
or
2:30 P. M.—*Trip to Versailles Plantation, Battle Field of New Orleans; Docks and Wharves (Round trip, $1 per person)
or
2:30 P. M. —*Delgado Museum and City Park; Newcomb Art School and Audubon Park (Round trip, $1 per person)
or
2:30 P. M.—*Mayan Exhibit-----Tulane University (Round trip, 25 cts. per person)
9:00 P. M.—President's Reception and Ball, Auditorium

Friday, May 13, 1932

9:00 A. M.—*Trip to Gulf Coast—Leaving L. & N. Station at 9:00 A. M., returning to New Orleans at 6:00 P. M. (Round trip, including luncheon and beautiful scenic drive along the coast, $6.00 per person)
10:00 A. M.—Golf Tournament---Metairie Golf Club

*Transportation paid by individual
All trips start from Jerusalem Temple

All women attending the convention are invited to participate in this entire program whether they are members of the Auxiliary or not.

Items of Interest.

The following items in regard to work being done by the various Auxiliaries are from the monthly report prepared by Mrs. Milton P. Overholser, Harrisonville, Mo., chairman of the Committee of Press and Publicity of the National Auxiliary:

Hygeia

In his annual report to the A. M. A. House of Delegates, Mr. F. V. Cargill, circulation manager, states that the Auxiliary is the only source from which *Hygeia* subscriptions are received that showed a gain in 1931 over 1930.

In addition to personal subscriptions, the Auxiliaries have sent *Hygeia* to State legislators, to city, rural and parochial schools, Y. M. C. A.'s, Y. W. C. A.'s, Parent-Teacher Associations, Red Cross, Visiting Nurses' Associations, Libraries, Judges of County Courts, and to other places where they thought the magazine would serve a useful purpose.

South Carolina

The Editor of a recent *Journal of the South Carolina Medical Association* writes of the Auxiliary as follows: "The South Carolina branch of this great National Organization is moving along in a splendid way. Some of the larger cities have engaged in activities of major importance to the health of the people. One of the projects is that of promoting the circulation of *Hygeia*, the greatest health magazine ever published in the United States. Another most worthy aim is that of establishing a Student Loan Fund with the idea of providing aid, where needed, for the sons and daughters of our medical men who desire to attend our medical schools."

In "Reciprocity Day" the large Greenville, South Carolina Auxiliary carried out recommendations of the National Educational and Public Relations chairmen. On this day repre-

sentatives of all Women's Clubs were invited to meet with the Auxiliary. Instructive addresses on the timely subjects of "High Blood Pressure" and Correct Posture, were given by two local physicians, followed by interesting questions from and discussions with the audience.

The South Carolina Auxiliary is making a splendid record this year in its two outstanding objectives: *Hygeia* and the Student Loan Fund. For the latter, $2.00 per member is the goal set.

Minnesota

The Organization and Public Relations achievements in Minnesota are worthy to be known and read by all Auxiliaries. A high percentage of Minnesota's counties are organized 100 per cent. A fine item in the Public Relations report has to do with an essay contest on the subject of Tuberculosis. To the high school boys and girls in the State, the Minnesota Auxiliary gave two loving cups for essays on Tuberculosis. From the 173 essays received ten were selected as the best. The writers of these were brought to Minneapolis one at a time, and the essays were broadcast over WCCO. Much publicity was given the Auxiliary and this project through the Twin City papers. These essays were printed, widely read, and much discussed.

New Mexico

It is interesting to know that the State Auxiliary of New Mexico is one with the Auxiliary to the Albuquerque Medical Society. The members are getting acquainted and playing together this year; and, as Auxiliary women inevitably do in their social relations, they are no doubt forming unexpected and delightful friendships.

Truth About Medicine

In addition to the articles enumerated in our letter of January 29th, the following have been accepted:

Abbott Laboratories
  Bismo—Cymol
Calco Chemical Co., Inc.
  Trichlorethylene—Calco
    Tubes Trichlorethylene—Calco, 1 c.c.
Riedel-de Haen, Inc.
  Decholin
    Decholin Tablets, 3¾ grains
  Decholin-Sodium
    Ampoules Solution Decholin-Sodium, 5 per cent, 10 c.c.
    Ampoules Solution Decholin-Sodium, 20 per cent, 10 c.c.
E. R. Squibb & Sons
  Iodobismitol—Squibb
Nonproprietary Articles
  Sodium Iodobismuthite
  Trichlorethylene

The following article has been exempted and included with the List of Exempted Non-medicinal Articles (New and Non-official Remedies, 1931, p. 481):

Robert McNeil
  Lubricant—McNeil

New and Non-official Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Antimeningococcic Serum Polyvalent.—An antimeningococcus serum (New and Non-official Remedies, 1931, p. 355, marketed in packages of one double-ended vial containing 15 c.c., and in packages of two double-ended vials each containing 15 c.c. United States Standard Products Company, Woodworth, Wis.

Phenobarbital Sodium.—Sodium Phenylethylbarbiturate.—The monosodium salt of phenylethylbarbituric acid. The actions and uses of phenobarbital sodium are the same as those of phenobarbital. For hypodermic injection, phenobarbital sodium is used in the form of 20 per cent solution.

Phenobarbital Sodium—Gane and Ingram.—A brand of phenobarbital sodium—N. N. R. It is marketed in the form of tablets containing 1½ grains. Gane and Ingram, Inc., New York.

Sterile Solution Skiodan (40 per cent by volume).—Each cubic centimeter contains skiodan (New and Non-official Remedies, 1931, p. 779), 0.4 Gm. Winthrop Chemical Co., Inc., New York.

Brucella Melitensis Vaccine.—A bacterial vaccine obtained from B. melitensis (B. abortus), proposed for use in the treatment of undulant fever caused by the organism commonly known as Brucella abortus and not by the organisms coming from the goat.

Brucella Melitensis Vaccine—Lederle.—Brucella Abortus Vaccine.—A heat killed suspension of Brucella melitensis organisms (2,000 million per cubic centimeter). The product is marketed in packages of one 5 c.c. vial. Lederle Laboratories, Inc., Pearl River, N. Y. (Jour. A. M. A., February 6, 1932, p. 479).

Sodium Iodobismuthite.—Sodium bismuth iodide.—A compound formed by the interaction of bismuth chloride and sodium iodide in ethyl acetate solution, consisting essentially of hydrated sodium iodobismuthite (sodium bismuth iodide) with inorganic salts. It contains approximately 21 per cent bismuth, 62 per cent iodide and 11 per cent water of hydration. This bismuth preparation is claimed to have the quality of appearing in the spinal fluid and of penetrating the brain tissue.

Iodobismitol.—A solution of sodium iodobismuthite (sodium bismuth iodide) in ethylene glycol containing 0.1 per cent acetic acid. Each cubic centimeter contains sodium iodobismuthite equivalent to 0.012 to 0.0138 Gm. bismuth and 0.109 to 0.129 Gm. sodium iodide. Iodobismitol seems to be well absorbed and to be excreted fairly rapidly. The claim is made for it that it will penetrate the brain in a great majority of persons treated. E. R. Squibb & Sons, New York. (Jour. A. M. A., February 13, 1932, p. 554).

Foods

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

Knox-Jell.—A Gelatine Dessert (Charles B. Knox Gelatine Company, Johnstown, N. Y.)—Gelatine dessert preparations; containing sucrose, gelatin and citric or tartaric acid; colored with certified food color or vegetable color and flavored with terpeneless oil of lemon, lime, or orange, or raspberry or strawberry extracts. One package (1 pound 10 ounces), is claimed to make one gallon of dessert.

Propaganda for Reform

Insulin—A Protein.—The early investigations of insulin gave indications that it is either a protein or a protein-like substance or something closely associated with proteins in nature. Recent investigations make it extremely probable that insulin is a well-defined protein and that the physiologic activity of this hormone is a property of the insulin molecule itself or of some special group within it. (Jour. A. M. A., December 12, 1931, p. 1803).

The Administration of Suprarenal Cortical Extracts.—The efficacy of replacement therapy in cases of Addison's disease by the injection of suitably prepared extracts of the suprarenal cortex, freed as far as possible from the epinephrine liberated by the medulla of the gland, has apparently been established. For patients that tolerate intramuscular injection well, this is perhaps the preferable method of administration. The intravenous method is indicated when the patient is in crisis and an immediate response is necessary. The possibility of effective oral administration has recently been reported on. In cases in which prolonged treatment is demanded, the oral route may be of preferential utility. (Jour. A. M. A., January 2, 1932, p. 52).

"Infra-Red."—Under the incorrect and confusing name "Infra-Red" the Iodine Products Co., of Caney, Kansas, describes an office test to determine the degree of acidosis. The designation "Infra-Red" is applied to a "super-alkalized iodide." This test can do no more than determine the titratable acidity of the urine. However, this is not the method of choice in measuring the development of an acidosis. (Jour. A. M. A., January 2, 1932, p. 71).

Average Optimum Dosage of Cod Liver Oil.—The Council on Pharmacy and Chemistry reports that at present the recommended dosages of cod liver oil differ widely. In part, the varying effects that have been reported may no doubt be explained by the unlike activity of different brands of cod liver oil. Thus, while the U. S. Pharmacopeia permits the claim that the product is biologically standardized if it contains 50 vitamin A units per gram as determined by the method given, certain brands now in New and Nonofficial Remedies guarantee a potency of 1,000 U. S. P. vitamin A units per gram, and none contains less than 500 units. The vitamin D potency of cod liver oil is probably still more uncertain, since no official method of assay has been adopted; hence it is most difficult to compare different brands of cod liver oil even if the vitamin D potency and method of assay are declared. In view of the foregoing situation, the Council referee in charge of cod liver oil and cod liver oil preparations believed that some effort should be made to ascertain the amount of cod liver oil that must be administered under ordinary conditions to obtain the effects attributable to cod liver oil. With a view to obtaining an expression in regard to the dosage of cod liver oil, an inquiry was formulated and sent to nineteen pediatricians. From the replies received it was noted that little reference is made to the possible physiologic value of the vitamin A of cod liver oil, and that the consideration of dosage is expressed wholly in relation to the vitamin D content, or in terms of its effects in overcoming the relatively obvious physical manifestations of rickets. In all the opinions cited, the authors apparently recognize the added value of vitamin A and prescribe cod liver oil in preference to plain viosterol. Viosterol is favored, however, but only as a supplement, such as cod liver oil with viosterol 10 D. Most of the pediatricians quoted seem to agree on a dosage of three teaspoonfuls daily as amply sufficient to prevent and cure clinically evident rickets. In contrast to the practice of physicians in former years, most of the pediatricians begin the administration of cod liver oil at a time when the growth begins to accelerate—if not within two weeks, then at least before the end of the first month—reaching the maximum dosage usually during the third and rarely later than the fourth month, thus usually aborting the rickets in its earliest incipience and hence obviating the use of large doses later. There appears to be general agreement that it is only during these first two or three months of most rapid growth that the child requires its maximum dosage of cod liver oil, which may be continued as an ample dosage on up to two years of age. The Council has decided that a dosage of three teaspoonfuls (12 c.c.: 3 fluidrachms) daily, may tentatively be set as the standard optimum dosage of cod liver oil for the average infant at three months of age. (Jour. A. M. A., January 23, 1932, p. 316).

Thallium Poisoning.—The danger of poisoning by thallium has been reported on. Its use as a rodent poison originated in Germany about 1920. Later the remedy was introduced as a depilatory to be applied either locally as a cream or to be taken internally. During the past year or so medical literature has contained reports of severe poisoning following the use of a proprietary depilatory cream called Koremlu, which had for its active ingredient thallium acetate. In its action, thallium seems definitely to select nervous tissue. There is apparently no known certain antidote to the action of thallium. It is a cumulative poison of high toxicity, without taste, smell or other warning properties. (Jour. A. M. A., January 30, 1932, p. 406).

Dermal Absorption of Salicylates.—Salicyl esters such as methyl salicylate (oil of wintergreen) are commonly prescribed as constituents of ointments, liniments and local applications, on the assumption that they possess a greater skin penetration owing to their lipoid solubility, than do other salicylates. The amount of salicyl absorbed under these conditions would appear nevertheless to be too small for definite systemic effects. The salicyl compounds offer a good opportunity for testing the comparative importance of lipoid and water solubility, and of the chemical reaction (basicity and acidity) in dermal absorption. A recent study indicates that lipoid solubility may not be as important as some other factors. Moderate degrees of chemical reaction (basicity and acidity), possessed by substances appear to be more important than lipoid solubility for penetration of the skin. Alkalinity, which softens the skin, and acidity, which apparently hardens it, are more important than simple solution in the fatty secretion of the skin. (Jour. A. M. A., February 20, 1932, p. 643).

Virginia Medical Monthly

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VOLUME 59 APRIL, 1932 No. 1

Editorial

Adequate Maternity Care.

How the Medical Society of the State of New York is taking the lead in that State to teach the public the need for adequate maternity care is explained in an article appearing in a recent issue of the *New York State Journal of Medicine.*

A plan was approved by the Medical Society to send every physician in the State copies of a leaflet for distribution to patients, with the title: "A Message to Expectant Mothers and Fathers from the New York State Medical Society." This circular outlined the fundamentals of maternity hygiene advising medical care from the time the woman believes she is pregnant until the doctor says she is able to resume her regular activities and responsibilities and to care for her baby. It concludes: "Labor begins with pain in the back, with or without discharge. As soon as labor begins, send for your doctor. Take things easy until he gets there. Ask him now for his card or telephone number so you will be able to call him immediately. ATTACH HIS PHONE NUMBER TO THIS CIRCULAR AND PLACE IT IN A PROMINENT PLACE."

These leaflets were not sent to physicians directly by the Society, but through the cooperation of the Maternity Center Association of New York City, an organization which conducted a Mother's Day Campaign last year for adequate maternity care, and is planning another for 1932. A letter accompanied the circulars offering to send physicians additional quantities if desired, and the response from the medical profession was immediate and highly favorable. Newspaper accounts appeared in the press of the state, under such captions as: "Physicians Take Lead in Effort to Reduce Maternal Mortality;" "Members of Medical Society Distribute Standards of Better Maternity Care to Patients."

Copies of the "Message to Expectant Mothers and Fathers" will be sent on request to physicians outside New York State, according to information received from Dr. George W. Kosmak, Chairman Medical Board Maternity Center Association, 1 East 57th Street, New York City.

The Maternity Center Association was a logical instrument to promote this activity. It had already come into prominence for its own maternity work, a study of the records of 4,726 pregnant women cared for by the Association was made by Dr. Louis I. Dublin and published in the *American Journal of Obstetrics and Gynecology* (December, 1930). This report showed a lower maternal mortality rate for mothers cared for by the Association as compared with those mothers in the same district not under its care. The obvious difference in the care received by the two groups was that the Maternity Center Association group had early and constant medical supervision.

In 1930 the Maternity Center Association launched a year's Educational Campaign, which culminated on Mother's Day, May 10, 1931. Efforts were made to reach as many persons in this country as possible through publicity methods which stressed the facts that the puerperal death rate in the United States was un-

necessarily high, that it could be reduced by adequate and skilled obstetric care. The object of the Campaign was to educate the public in the essentials of such care. Daily and weekly newspapers, magazines and trade journals all over the country carried the material which the Maternity Center Association sent out. The Metropolitan Life Insurance Company, the Borden Products Company, and Parke-Davis and Company devoted newspaper and magazine display advertising to the importance of adequate maternity care. Governors and mayors issued proclamations and health commissioners wrote articles and broadcast over the radio; ministers preached sermons; news reels in every theatre in the United States showed campaign workers engaged in behalf of the work of the organization.

Dr. Greer Baughman, Chairman of the Maternal Welfare Committee of the Medical Society of Virginia, in commenting on this effort, says:

It is interesting to know what other states are doing to reduce the maternal and infant mortality.

Every movement seems to emphasize prenatal and postnatal care and tries to get the pregnant woman in touch with her doctor.

The Medical Society of the State of New York is recommending that leaflets be sent to the doctors of their State who in turn will distribute to their patients a pamphlet entitled "A Message to the Expectant Mothers and Fathers from the New York State Medical Society." These leaflets were not sent to the physicians directly by the Society but through the cooperation of the Maternity Center Association of New York City. Copies of the "Message to Expectant Mothers and Fathers" will be sent, on request, to physicians outside of New York State.

The Maternity Center Association was a logical instrument to promote this activity. It has already come into prominence for its own maternity work.

Insulin Therapy in the Non-Diabetic.

One has noted in the past few years observations on the use of insulin in non-diabetic conditions. Insulin therapy has been of signal value in the management of diabetics, but the use of this agent in the non-diabetic has yet to be proved as salutary practice. One's interest in this matter may be aroused by a study of Lueders and Watson.* Their effort was directed to discover whether insulin when applied to non-diabetics with malnutrition promotes normal secretion of pancreatic enzymes and whether the striking gains in weight in such a group may be attributed in part to an increased power of digestion and assimilation of food.

They note that other investigators have shown that the ingestion of the same amount of food without the use of insulin produces comparatively slight increase of weight. They bring out also that recently, physiologists have accepted the thesis of the increase of gastric and intestinal motility and the hypersecretion of the pancreas and liver under the effect of hypoglycemia incident upon the injection of insulin.

Twenty patients were employed in this study. The following diagnoses were made in this group of non-diabetics: achylia gastrica, four; pernicious anemia, three; gastroduodenal new growth, three; chronic eczema, two; giardiasis, two; visceroptosis, two; hyperthyroidism, one, and senility, one. Insulin was administered from fifteen to thirty minutes before breakfast and dinner. The diet consisted of high carbohydrates and fat. Sugar was given to relieve symptoms of hypoglycemia. A diet of 4,000 calories causes gain in weight. There was quantitative estimation of enzyme activity: amylolytic, tryptic, and lipolytic.

In eighteen of these patients with malnutrition, a measurable increase in concentration of pancreatic ferments was obtained. Accompanying this, there appeared in a number of these patients a return to a normal sequence of the so-called A, B, C bile fractions. The authors in concluding this report affirm that, in their opinion, "the striking gain in weight in most of the eighteen patients receiving insulin therapy was due, in part to the stimulating effect of insulin on external pancreatic secretion and bile and in part to a normal digestion and assimilation of aliment."

Thiocyanate Therapy in Hypertension.

Observations on the toxic effects of thiocyanate in cases of hypertension come in opportunely at this time. Blood pressure is much on the public mind. Laymen talk about blood pressure and discuss the *pros* and *cons* of the high and low blood pressure. Likewise, many therapeutic measures and agents have been employed by the profession in the therapy of these conditions.

*Archives Internal Medicine, February, 1932, page 330.

Hence, one may note with interest the observations of Goldring and Chasis* on the toxic effects of thiocyanate that has gained favor by its effect in reducing high blood pressure. It is observed by these authors that frequent confirmation of Pauli's observation, in 1903, of the potency of thiocyanate in reducing high blood pressure, has caused the general acceptance of the drug in this therapeutic field. The appearance, however, of toxic manifestations thirteen times in a series of seventy-four trials in fifty patients warranted a report of this important phenomenon in the use of the drug. They recall by reference to literature that Westphal and Blum administered 0.5 gm. three times a day for eight to twelve days in nine patients and noted a tendency to respiratory inflammations, muscle weakness and psychosis; Takacs observed a papular dermatitis following the administration of 1 Gm. daily for nine days; Weiss and Ruedemann and Ayman observed like toxic disturbances. Nichols, who presented a summary of this drug, recommended as a safe dose in man 1 Gm. daily, but Nerking noted toxic effects with doses of from 0.5 to 1 Gm. daily. Others were cited by these authors as having noted toxic effects more or less in the employment of this drug.

The authors used in their study from 0.13 to 0.65 Gm. three times daily for from one to four weeks. Of the fifty patients treated seventy-four different times with thiocyanate, thirteen presented toxic disturbances. Eleven of these toxic phenomena disappeared within a few hours to four days after the drug was discontinued. The usual appearance of toxic manifestations was: muscular fatigue, accompanied or followed by nausea, vomiting, disorientation and mental confusion; motor aphasia; hallucinations of sight and hearing. In fatal cases, there was progression of delirium, convulsive twitchings, coma and death. Two of the patients died as a result of thiocyanate poisoning. In 17 per cent of the patients receiving the drug, toxic manifestations appeared. A fall in blood pressure, the occurrence of toxic signs and death were apparently unrelated to the amount of thiocyanate administered or to the amount of residual drug in the body. The authors think that some persons show a distinct susceptibility to thiocyanate. At this time they affirm that to them there is not known any distinguishing marks by which these persons can be distinguished. Physicians employing this remedy may find in this report on the toxic manifestations interesting observations and a consideration of the articles cited in the bibliography will give one the German view of the drug as well as important publications in English by American authors.

*Archives Internal Medicine, February, 1932, page 321.

The Effect of Bronchial Asthma on the Circulation.

Frequently, the problem of heart action and circulatory conditions during an attack of asthma are presented to practitioners. Any consideration of this subject upon so large a group as fifty patients must arouse the interest of the medical practitioner. So one may comment on this report of Criep* who made a cardiovascular survey of fifty patients suffering from bronchial asthma.

As a result of prolonged attacks of dyspnoea, resulting in marked changes in the lungs, the general opinion has been that the heart may undergo permanent and fixed pathologic hypertrophy and dilatations but the conclusion of this author is that bronchial asthma does not have a permanent damaging effect on the cardiovascular system. Acute attacks, it is stated, may as a result of the associated asphyxia produce transitory disturbances in cardiac conditions.

Viscerocardiac Reflexes.

Scott and Ivy† have made an experimental study of this subject in frogs and dogs in the department of Physiology and Pharmacology at the Northwestern University Medical School. Its bearing on the alleged association of disease of the biliary tract with cardiac abnormalities in man is brought out and, hence, should have for practitioners an essential interest.

The authors review the point of cardiac irregularities induced reflexly from visceral excitation as supported by experimental evidence. The Goltz experiment of tapping the viscera in the frog and producing reflex slowing of the heart is noted. Carlson and Luckhardt's experiments showing that in the frog the stimulation of the lungs, gastro-intestinal tract and genito-urinary tract causes inhibition of cardiac rate, are noted. Schrager and Ivy reported that changes in blood pressure and heart rate through distention of the gall-bladder and biliary ducts were not uniform and they felt that the reaction of the cardiovascular system to distention of the biliary system is dependent on

*Archives Internal Medicine, February, 1932, page 241.
†Archives Internal Medicine, February, 1932, page 227.

the functional state of the cardiovascular system at the time the distention takes place.

Buchbinder, however, reported, according to the authors of this study, some interesting experiments in the frog wherein an incision of the gall-bladder causes transient arrest of the heart, lasting from one to ten seconds, and a bradycardia lasting from one to ten minutes. The authors investigated this phenomenon as related to spillage of bile into the peritoneal cavity. They found that the gall-bladder and biliary passages may be punched and stretched without causing a change in cardiac rhythm of frogs that show cardiac inhibition on mechanical stimulation of other abdominal viscera. They found that the incision of the gall-bladder of the frog so that bile is spilled into the upper abdominal cavity, without coming in contact with the heart, causes cardiac inhibitions. They further state that observations of Schrager and Ivy on the effect of distention of the biliary passages in the "normal" dog have been confirmed essentially.

The experimental evidence does not, they state, indicate positively the existence of a direct reflex connection between the biliary passages and cardiac activity. But the authors remind the reader that in the experiments performed on dogs and frogs up to the present time, presumably only normal mechanisms have been excited. Patients considered in such a condition have pathology in the biliary tract and heart as well, in all probability. Of course, say the contributors, man may possess a direct or more sensitive viscerocardiac mechanism but this is not likely since all patients with pathologic conditions of the biliary tract or other viscera do not manifest cardiac abnormalities.

President's Message

Organization.

Every law bearing on health and prevention of disease, every statute of a medical nature, State or Federal, has been enacted as a result of the efforts of the medical practitioners in cooperation with those especially interested in health and preventive measures.

In order to protect the public and at the same time preserve our dignity and position as a profession, it is very important for the physicians of the State to be organized and for the component society organizations to work together for the preservation of high ethical standards. No organization can function smoothly and efficiently unless the individual members work together harmoniously. It is with a sincere desire to bring about this condition in the Medical Society of Virginia that the officers of this society are appealing to every committee, to every member of each committee, and to every member of each component society, for cooperation.

We must recognize that there is a distinct need for health workers—both physicians and nurses—and it is regrettable that in some localities there is friction between the health workers and those in general practice. This is an unhealthy and unpleasant condition of affairs and should be corrected by conference and cooperation.

The response of the physicians of the State to the appeal for the general diphtheria immunization campaign throughout the State has been very gratifying.

I have received letters from doctors all over the State expressing their approval and pledging hearty support of the scheme. The general practitioners in any community could, by getting together and cooperating with the health workers, direct to their own satisfaction campaigns for enlightening and instructing the public and the profession in reference to numbers of diseases and conditions. If this is true, and undoubtedly it is—how great is our opportunity and how binding are the responsibilities resting on the general practitioner? The busy doctor in rural communities is often unable, because of lack of time, to stress the importance of preventive measures and may appear careless and indifferent in failing to advise his patients in these matters. In such communities health workers with tact and skill can easily demonstrate their usefulness and make a place and name for themselves without reflecting on the practitioner, but in the proper spirit aiding him and cooperating with him.

I wish here to call attention also to the work being attempted by our committee on Public Relations—State and County. Dr. Alex. F. Robertson is chairman, and I wish to recite here a portion of his letter:

"The Committee on Public Relations asks that you give us your cooperation in an attempt to advance our work largely through correspondence. We feel that visits to the various societies at the present time would entail an ill-advised expense and work a hardship on the committee members.

"The work of the Committee last year was largely a consideration of state medicine. So far as our own State is concerned we feel that we have nothing to fear from the activities of the State Health Department, under the conservative and sympathetic direction of our new Commissioner, Dr. Draper. However, in this connection we should like a statement from you as to local conditions, especially covering the question of infringement by health workers and nurses.

"In Federal encroachment we see our most insidious attack, particularly in governmental hospitalization of all ex-service men for disabilities not incident to service.

"Extension of this hospitalization to the families of veterans, to members of Congress, and to civilian employees are further steps along the road to state medicine which we should vigorously oppose. A discussion of this with our own representatives in Congress, stressing the enormous cost involved, would be helpful. If we could induce the American Legion to substitute greater benefits for disabilities of service origin in place of this hospitalization it would carry enormous weight.

"One function of our committee is to promote better feeling toward the profession by the public and we feel this can be forwarded by having at least one meeting a year of general interest, open to the public.

"If a guest is desired, a list of speakers may be obtained by writing to Mr. George Eutsler, Associate Director, Extension Department, University, Virginia.

"Will you bring these matters to the attention of your Society? Your committee will appreciate any suggestions you may wish to offer."

This is a fine letter and should stimulate active interest in the matters referred to.

I am convinced that real progress has been made in the work of coordinating the various agencies in the State Society since the meeting in Roanoke, last October. We have received cordial and encouraging letters, indicating a spirit of goodwill and cooperation, from sections where previously there existed some misunderstanding between physicians and health agencies.

I. C. Harrison, M. D., *President,*
Medical Society of Virginia.

Proceedings of Societies

Accomack Medical Society.

The annual election of officers was held during the December, 1931, meeting, at which time the following were elected for the ensuing year: Dr. James C. Doughty, Onancock, President; Dr. Ira Hurst, Parksley, Vice-President; Dr. John W. Robertson, Onancock, Secretary-Treasurer (re-elected).

Dr. J. H. Hiden, the retiring president, read a very interesting article which he has published in the *Medical Mentor*, entitled "Reflections upon the Difficulties of Writing" (April, 1931, issue). Dr. Hiden also gave a very interesting resumé of his year's work as president, stressing the fact that notwithstanding the general depression our society "had held together."

The February meeting was held under the auspices of the incoming president, Dr. Doughty. Dr. Rooker J. White, Keller, reported a very interesting case of Leukemia Complicated by Typhoid Fever. Dr. Gardiner, of the State Board of Health, gave a talk on Toxin-Antitoxin Immunization.

The question as to whether the local physicians or the Board of Health would handle the Toxin-Antitoxin clinics was postponed until a future date on account of the small number in attendance at the meeting.

Dr. Ira Hurst read an abstract of an article appearing in the current *Journal of the A. M. A.* regarding shortened Umbilical Cord.

The Society ordered the Secretary to send letters expressing regret over the enforced absence of Drs. Bradshaw and Critcher, incident to their illness and accident, respectively. Both have improved at this writing.

John W. Robertson,
Secretary.

The Post-Graduate Medical Society of Southern Virginia

Held its annual meeting at Lawrenceville, February 23rd, at 2 P. M. The invited guest, Dr. T. J. Williams, professor of Obstetrics at the University of Virginia, gave a most interesting lecture on the subject of "Backache in Gynecology." The discussion was led by Dr. J. Bolling Jones. The presentation and discussion by various physicians consumed the first two hours of the program and was greatly enjoyed.

The remainder of the program was as follows:

"Indications for Contraception"—W. M. Bowman, M. D., Petersburg.
"Common Chronic Infections of the Cervix and Vagina"—E. L. Kendig, M. D., Victoria.
"Beginners Program"—B. B. Bagby, M. D., Director Bureau Child Health, Richmond.
"Anemias in Infancy"—W. B. McIlwaine, M. D., Petersburg.
"Certain Aspects of Gastro-Intestinal Hemorrhages"—Hyman Cantor, M. D., Petersburg.

Sixty physicians attended the meeting, most of them being from the counties immediately adjacent to Lawrenceville, but there were several visitors from larger cities of the State, including Dr. I. C. Harrison, President of the Medical Society of Virginia, who made an excellent talk and also discussed several of the papers

Due to the unavoidable absence of Dr. Frank Mallory, President of the Society, the meeting was presided over by Dr. Wright Clarkson, Chairman of the Program Committee.

The following officers were elected: President, Dr. W. W. Seward, Surry; Vice-Presidents, Dr. H. G. Stoneham, Waverly, and Dr. E. L. Kendig, Victoria; Dr. Philip Jacobson, Petersburg, Secretary-Treasurer, and Dr. Wright Clarkson, Chairman of the Steering Committee, were re-elected.

The following committees were also re-elected: *Board of Censors:* Drs. T. F. Jarratt, C. S. Dodd, and W. D. Prince; and *Public Health and Legislation:* Drs. J. B. Jones, W. M. Phipps, and L. O. Vaughan.

Drs. T. H. Anderson and J. B. Vaiden, of Lawrenceville, acted on the Entertainment Committee and provided a delightful dinner following the meeting.

The James City-New Kent Counties Medical Society

Held its regular meeting at the Wayside Inn, Toano, Va., March 3rd, with the president, Dr. A. M. Sneed, of Toano, in the chair. Eight members were present.

There was some discussion about the administering of toxin-antitoxin to the pre-school child and it was decided by the Society to have a so-called clinic for this between March 15th and April 15th, 1932. This is to be given in the doctor's office and a charge of one dollar will be made for those able to pay.

The members present voted to send flowers to Dr. D. J. King, of Williamsburg, who has been confined to his bed for the past month.

It was decided to held the next meeting at Providence Forge, Va., on May 5th.

J. R. Tucker,
Secretary.

The Tazewell County Medical Society

Held a meeting on March 18th, at which time the following were elected to membership: Dr. S. E. Massey, Amonate; Dr. James Williams, Richlands; Dr. Rufus Brittain, Jewell Ridge; Dr. William A. Seawell, Raven; and Dr. Herbert A. Porter, Boissevain.

Dr. J. W. Shawver, Richlands, is president, and Dr. Isaac Peirce, Tazewell, secretary.

Clinic by Norfolk County Medical Society.

The Norfolk County Medical Society held another of its all day clinics on March 30th, starting at 10:00 A. M. The morning clinics were at Protestant Hospital and the afternoon ones at St. Vincent's Hospital. All of these were conducted by members of the local society. Luncheon was served at Protestant Hospital following the morning clinics. Supper was at the Country Club, following which Dr. D. L. Borden, Professor of Surgery at the George Washington School of Medicine, Washington, D. C., gave a talk on "Some Unusual Intra-Abdominal Lesions," showing moving pictures.

The committee in charge of arranging the program, this year, was composed of Drs. Julian L. Rawls, A. B. Hodges, and R. DuVal Jones, Jr., all of Norfolk.

Richmond Academy of Medicine.

Dr. Charles W. Burr, of Philadelphia, prominent neurologist and professor of mental diseases at the University of Pennsylvania, was the guest speaker before the Academy at its regular meeting on March 8th. Dr. Burr's address on "Mental Diseases as a Social Problem" followed the annual dinner of the organization, which was held at Commonwealth Club. Dr. Burr is an acknowledged authority on his subject and is at present neurologist to several Philadelphia hospitals.

Another feature of the evening's program was an illustrated talk on "Medical Conditions in India," by Dr. Fred J. Wampler, director of the out-patient clinic of the Medical College of Virginia. Dr. Wampler recently returned after a year in India where he served as a member of a commission sponsored by the Institute of Social and Religious Research of New York to make a study of group missions in India.

Dr. Finley Gayle is president and Dr. Mark W. Peyser secretary of the Academy.

News Notes

Dates for our State Meeting.

As announced last month, the Medical Society of Virginia will hold its sixty-third annual meeting in Richmond. The Richmond Academy of Medicine, which will be the host to this meeting, has set the dates as November 1, 2, and 3, 1932.

It is hoped that doctors all over the State will reserve these dates and arrange to attend the meeting here next Fall.

New Orleans Meeting of the A. M. A.

Call has been issued for the eighty-third annual session of the American Medical Association to be held in New Orleans, La., May 9-13, 1932. While the House of Delegates will meet on the 9th, the Scientific Assembly will not open until the general meeting on the evening of May 10th. The various sections of the Scientific Assembly will start on Wednesday at 9 A. M. and subsequently, according to their programs. Dr. E. Starr Judd, Rochester, Minn., is president, and the president-elect, to be installed at the Tuesday evening session in the Municipal Auditorium, is Dr. E. H. Cary, of Dallas, Texas. The House of Delegates will hold all its meetings at the Roosevelt Hotel.

Those who have not made hotel reservations should do so at once. Dr. Emmett L. Irwin, Box 1460, New Orleans, is chairman of the Committee on Hotels.

Reduced railroad fares on the certificate plan may be secured on the basis of fare and one-half for the round trip. On this basis, the railroad and Pullman fares from several of the larger Virginia cities would be as follows:

From	*R.R. Fare on Basis Fare and Half for Round Trip*	*Pullman One Way* Lower	Upper
Richmond	$55.43	$11.25	$9.00
Norfolk	58.88	12 00	9 60
Petersburg	55 32	11.25	9.00
Alexandria	59.85	12.00	9.60
Charlottesville	54.24	10.88	8.70
Lynchburg	50.97	10.50	8 40
Roanoke	48.12	9.75	7.80

Post-Convention Cruise

Immediately following the convention, a delightful cruise has been arranged. The special ship for the physicians, their wives and friends will leave New Orleans on Saturday, May 14th, for a twelve-day trip to Havana, the Panama Canal and Puerto Cabezas, the banana port of Nicaragua. For further information as to rates, etc., address The Gardner-Coburn Tours, Bienville Hotel, New Orleans, or Standard Fruit & Steamship Company, 224 Baronne Street, New Orleans.

The Virginia Society of Oto-Laryngolgy and Ophthalmology

Is to hold its annual meeting at the Cavalier Hotel, Virginia Beach, Va., Saturday, May 21st, being entertained by the Norfolk doctors. The program has not been completed but a splendid meeting is expected. Dr. Clarence Porter Jones, Newport News, is president; Dr. Courtney Edmond, Clifton Forge, vice-president; and Dr. H. Grant Preston, Harrisonburg, secretary-treasurer.

Mother's Day Campaign.

Plans for a nation-wide Mother's Day Campaign to obtain better maternity care for expectant mothers are taking concrete form among many organizations, according to announcement by the Maternity Center Association, 1 East 57th Street, New York City.

Last year the Campaign sponsored by the Association culminated in a meeting of prominent citizens who voiced an indignant protest against the high maternity death rate in this country, and demanded America provide its mothers with more adequate maternity care, by means of which, authorities maintain, 10,000 of the 16,000 mothers who die annually in childbirth could be saved. The campaign last year interested fully as many men as women, and indicated that special efforts are to be made in 1932 to awaken prospective fathers to the fact that a well baby and a healthy mother require more than simply to let nature take its course.

Mrs. John Sloane, president of the Maternity Center Association, states that the Center will be glad to help local organizations everywhere to call the attention of their communities to the vital need for adequate maternity care. Mother's Day is Sunday, May 8th. Material for speeches, programs for women's clubs, outlines for church services and other helps for local campaigns are available free of charge to anyone interested in improving conditions in their locality.

"Find the Other Case."

This is the slogan which has been adopted in the Early Diagnosis Campaign, which is

being conducted by the National, State and Local Tuberculosis Associations in the month of April. By stimulating the existing case finding agencies to closer cooperation, these organizations hope to reduce still further the death rate from tuberculosis by discovering existing cases, at present unknown, and by inducing persons who have been in close contact with tuberculous cases to have an examination to assure themselves that they have not contracted the disease.

Physicians and others are urged to cooperate all possible with their local organizations in this campaign.

News Notes from University of Virginia, Department of Medicine.

Dr. D. C. Smith spoke before the Rockingham County Medical Society, meeting in Harrisonburg on February 8th, on Classification of Skin Diseases.

At the meeting of the University of Virginia Medical Society on February 22nd Dr. Hugh Trout, Surgeon in Chief, Jefferson Hospital, Roanoke, Va., spoke on the subject of The Release of Pericardial Adhesions.

On February 19th Dr. C. C. Speidel gave an account of his studies of living nerve fibers before the students in Biology at Lafayette College, Easton, Penna.

On February 17th, Dr. Thomas Spies of the Department of Internal Medicine of the Lakeside Hospital in Cleveland visited our Medical School.

Dr. H. B. Mulholland spoke before the Warwick County Medical Society, meeting in Newport News on February 22nd, on Recent Advances in the Study of Diseases of the Blood.

On February 26th Dr. Francis R. Dieuade, Professor of Medicine at the Peiping Medical School, China, visited our Medical School.

At the meeting of the University of Virginia Medical Society on March 7th, Dr. Kenneth Maxcy spoke on Recent Studies in the Typhus-like Fevers, and Dr. E. C. Drash spoke on Closed Internal Pneumolysis.

On March 14th, Dr. George R. Minot, Professor of Medicine at the Harvard Medical School, addressed the faculty and students on the subject of The Treatment of Anemias.

Medical College of Virginia News Notes.

Nutrition in Its Newer Aspects was the subject of Dr. James S. McLester, professor of medicine in the University of Alabama School of Medicine, when he gave the third Stuart McGuire lecture on Friday night, March 4th. Dr. McLester's paper will be printed in bulletin form by the Medical College of Virginia and will be made available for interested members of the profession.

Exhibits from various departments of the Medical College of Virginia were shown at the Tri-State Medical Society meeting held at Raleigh, N. C., last month.

In February the out-patient department of the college set a new record of 5,027 visits, or an average of 201 patients per day. The Richmond Kiwanis club has continued its appropriation of $1,800 for the orthopedic clinic of this department during 1932.

Construction work on the new library is proceeding according to schedule and it is expected this attractive new unit of the college will be ready for occupancy during the coming summer.

Dr. Robert C. Bryan, at his request, has been retired from the professorship of genito-urinary surgery and elected emeritus professor of genito-urinary surgery by the Board of Visitors of the college. For more than twenty-five years Dr. Bryan was actively on duty at the college.

Dr. Austin I. Dodson, recently assistant professor in genito-urinary surgery, has been appointed to succeed Dr. Bryan as professor of this branch. Following the World War, Dr. Dodson took post-graduate work in genito-urinary surgery, and has been connected with the staff of the Medical College of Virginia since 1920.

A symposium on fungus diseases will feature the monthly meeting of the faculty and staff of the Medical College of Virginia to be held March 17th. These meetings have set a new record for attendance this year, more than one hundred being present at a number of meetings. It is expected that a volume of the proceedings resulting from these meetings will be published in the fall. These will be available for inter-

ested members of the profession, both alumni and others.

Three Richmonders and nine other Virginians were on the dean's list of the school of pharmacy of the Medical College of Virginia. To receive such recognition the student must have made an average of 90 on the semester's work.

The program for the scientific monthly meeting of the faculty and staff of the college, which will be held Thursday, April 21, 1932, in the auditorium of St. Philip's hospital dormitory, will be (1) Osteomalacia, Dr. Fred J. Wampler; (2) The Neutralizing Effects of Saliva, Dr. J. C. Forbes. The profession is invited to this meeting.

General Walter Drew McCaw, distinguished alumnus of the college, will be awarded the honorary degree of Doctor of Science at Commencement May 31st. Dr. McCaw, son of the late Dr. James B. McCaw, is well known in Virginia for his outstanding work in the medical corps of the army from which he retired some time ago.

News Notes from the Duke University School of Medicine and Duke Hospital.

On February 18th, Dr. M. Pierce Rucker, of the Medical College of Virginia, gave a clinic at the Duke Hospital on Eclampsia.

On March 11th, Dr. Joseph Colt Bloodgood, Clinical Professor of Surgery, Johns Hopkins University School of Medicine, gave a clinic on Cancer of the Breast.

On the same date, Dr. George R. Minot, Professor of Medicine at Harvard Medical School, and Director of the Thorndike Memorial Laboratory at Boston City Hospital, lectured before the Durham-Orange County Medical Society, at the Duke Hospital, on The Treatment of Anemia, and also gave a clinic at the hospital the following morning.

Buxton Clinic to be Opened in May.

The Elizabeth Buxton Hospital, Newport News, Va., this year celebrates its twenty-fifth year of continuous operation as a general hospital, treatment being provided for surgical, medical and obstetrical cases. Dr. Joseph T. Buxton is surgeon-in-charge. The hospital has made wonderful strides. The first unit constructed provided accommodations for fifteen patients. With each succeeding five years additional units have been added so that it can now accommodate approximately one hundred patients. This hospital has always met the requirements of the American College of Surgeons.

In conformity with its five-year improvement program, the clinic building will be opened this year and will be known as the Buxton Clinic. This building, which is to be opened in May, is three stories in height and is located to the rear of the hospital building, fronting on Blair Avenue. The first two floors will contain offices for the medical staff, library, laboratories and general administrative offices. The third floor will be occupied by nurses. The opening of this building will increase the capacity of the hospital so that approximately one hundred and twenty-five patients may be accommodated.

Dr. Lula Woods Garst

Has returned to her work at Catawba Sanatorium, Va., after several months in Baltimore, where she was taking special work in gastroenterology in the Department of Medicine at Johns Hopkins University.

Dr. N. W. Sisson,

Of the class of '24, University of Virginia, Department of Medicine, having finished a two-year service at Bellevue Hospital, New York City, has located in Washington, D. C., with offices at 1726 Eye Street, Northwest, for the practice of oto-laryngology.

Dr. William F. Drewry,

Director of the Bureau of Mental Hygiene, of the State Department of Public Welfare, early in March, gave a lecture on "Mental Hygiene and the Physician" at the Medical School of the University of Virginia.

$715,000,000 Spent in U. S. Yearly for Medicines.

"The Costs of Medicines," published by the University of Chicago Press, discloses authentic figures on the drug industry in this country obtained through a three-year study on the subject made for the Committee on the Costs of Medical Care by Dr. R. P. Fischelis, vice-president of the American Pharmaceutical Association, and Dr. C. Rufus Rorem, formerly a staff member of the Committee.

It is stated that the people of the United States spend $715,000,000 annually for drugs and medi-

cines, which constitutes about 20 per cent of the national bill for sickness. Of this amount $190,000,000 (26.6 per cent) is spent for medicines prescribed by physicians; $165,000,000 (23.1 per cent) for non-secret home remedies and $360,000,000 (50.3 per cent) for "patent medicines" of secret composition.

It was discovered that the average expenditure for medicines is approximately $22 annually per family of four persons, or $5.50 per member. Actual expenditures per capita vary widely, however, and tend to be highest in the cities.

Some other important facts disclosed by this survey are:

Patients attempting to diagnose their own ailments by comparing their symptoms with those described in patent medicine advertisements may frequently forego proper medical attention until it is too late to effect a cure.

"Official" medicines can usually be purchased by the pharmacist for a fraction of the price of proprietary medicines or ethical specialties, with a corresponding reduction in price to the patient.

Provided they were engaged in no other pursuits, approximately 10,000 pharmacists could fill the 165,000,000 physicians' prescriptions now annually filled by 115,000 registered pharmacists in 60,000 drug stores. Limiting the compounding of prescriptions to 10,000 pharmacists in as many drug stores, however, would leave many communities without pharmacists and in larger communities would spread the number of pharmacies, making it inconvenient for the public to obtain prompt prescription service. On this account, the merchandising activities of drug stores, frequently derided, make the services of registered pharmacists available and more convenient to the public.

May Day—National Child Health Day.

The American Child Health Association appeals to people everywhere to "support your community Child Health Program: it protects your home." It states that the general purpose of May Day 1932 is to focus the spirit of this year upon the needs of children, in order that

Each child may be sheltered in its own home and share secure family life;

Each child may have essential food elements in each day's diet;

Each child may have an adequate amount of clean and safe milk;

Each child may have plenty of sunshine, sleep, rest and recreation;

Each infant may be born healthy, of a healthy mother who will live to love her child and take care of her family; and that all

The nineteen points of the Children's Charter—the Magna Carta of Childhood—may be put into practice in every community.

Dr. B. B. Bagby, Director of the Bureau of Child Health, State Department of Health, Richmond, is Virginia's chairman for May Day.

Dr. Benj. E. Hunt,

Of the class of '24, Medical College of Virginia, recently completed a year's residency in obstetrics at the Jersey City Hospital, Jersey City, N. J., and has located temporarily at his home at Jeffs, Va.

Warning.

One of our members has suggested that we issue a warning against one Mr. James Murray who represents himself as being from Cleveland, Ohio, and selling stock in an advertising scheme. He pretends to have met you before and is just renewing an acquaintance. One will hardly be interested in his stock. Then he will come back with some hard luck story and ask to have a check endorsed for him.

This member states that he has one of this man's checks which was returned, marked "no such account."

Mr. William L. Sohl,

Of the Laine Chemical Company, announces his removal to Bridgeport, Conn., where he will take charge of the office of this company.

Industrial Eye Accidents.

Although most industrial eye accidents are preventable, American industry every year permits the loss of one or both eyes by more than 2,000 workmen, 300,000 minor eye injuries, and the annual waste of approximately $50,000,000 in time lost, compensation payments, and medical bills. These facts were brought out by speakers before the session on "The Eye—Its Relation to Safety," sponsored by the National Society for the Prevention of Blindness, at the Third Annual Greater New York Safety Conference, February 24th. Many interesting reports were given.

A mandatory rule requiring every employee in an industrial shop to wear goggles while at work, on penalty of dismissal, was advocated by

Harry Guilbert, Director of Safety for the Pullman Company, Chicago, Ill., member of the Executive Committee of the National Safety Council. As a result, the Pullman shops at Chicago and other places enjoy the remarkable distinction of not having a single eye loss in the last six years among the thousands of men daily engaged in dangerous work.

The American Proctologic Society

Is to hold its annual meeting in Memphis, Tenn., May 6th and 7th, so that those planning to attend the meeting of the American Medical Association may reach New Orleans in time for that meeting. A program of much interest has been arranged. Dr. W. O. Hermance, of Philadelphia, is president, and Dr. Curtice Rosser, Medical Arts Building, Dallas, Texas, secretary.

The Thomas W. Salmon Memorial Lectures.

These lectures are to be delivered by Dr. Adolf Meyer, Professor of Psychiatry, Johns Hopkins University and Director of the Henry Phipps Psychiatric Clinic, Baltimore, at the New York Academy of Medicine, Friday evenings, April 8, 15, and 22, 1932, at 8:30 P. M.

Dr. Meyer was chosen by the committee in charge of the lectures in recognition of his services to American psychiatry and his eminence as a scientist and teacher in this branch of medicine. His subject for these lectures will be "Psychobiology."

The Thomas W. Salmon Memorial Lectures were established in honor of the late Dr. Thomas W. Salmon, Professor of Psychiatry of Columbia University and the first Medical Director of The National Committee for Mental Hygiene. He was a leader in mental medicine and did more in his day to advance the care and treatment of the mentally ill in this country than perhaps any other one professional man.

Shortly after his death his friends and associates formed The Thomas W. Salmon Memorial Committee, which raised an endowment fund of $100,000 as a permanent memorial in his honor for the advancement of psychiatry and mental hygiene, and each year an outstanding worker in these or related fields will be selected to give the Salmon lectures, which form the main activity of the memorial.

Oversupply of Graduate Nurses.

According to the Committee on the Grading of Nursing Schools, training schools must curtail the steady production of more nurses or the morale of the nursing profession will break down completely. How serious the oversupply of graduate nurses has become is revealed by the Committee after tabulating figures for eighteen states and the District of Columbia. For this group, since the 1920 census, the total population has increased 7 per cent, while the total number of trained nurses has increased 78 per cent.

Although there are still areas of the country and groups of patients not properly nursed, owing to poor distribution and lack of special training, the figures for the forty-two cities studied show that the average nurse has no more than 149 days of employment in any given year, according to the present sickness rate. However, according to the *American Journal of Nursing*, there still exists the unnursed patient in certain fields and some of the unemployed nurses can well take up special training that will fit them for these types of service.

The Richmond Academy of Medcine

Announces the following interesting programs:

April 12—Radiologic Examination in Intestinal Perforation—Dr. Daniel D. Talley.
A Discussion of Function and Repair of Pelvic Fascia—Dr. Stuart Michaux.
Acute Epidemic Tracheitis—A Preliminary Report—Dr. W. Ambrose McGee.

April 26—The Care of the Weak Foot—Dr. J. B. Dalton.
The Filterable Viruses and Bacteriophage—Dr. Earl B. McKinley, Dean of George Washington Medical School, Washington, D. C. Dr. McKinley was formerly Associate Professor of Bacteriology at Columbia and Director of the Porto Rico School of Tropical Medicine.

The programs for May have not been completed, but will include:

May 10—Symposium on Pulmonary Tuberculosis—Drs. Dean Cole, Frank S. Johns, Kinloch Nelson, L. O Snead and P. E. Schools.

May 24—Dr. William Gerry Morgan, Washington, D. C., will be the guest speaker.

Dr. A. M. Showalter,

Christiansburg, Va., was the principal speaker at exercises held in observance of the George Washington Bicentenary, under the auspices of Hellenic Lodge No. 249, at the Masonic Temple, Richmond, Va., on March 25th.

Child Guidance Work Grows.

An increasing tendency to seek medical advice and treatment for mental disorders, behavior and personality problems, and other forms of human maladjustment, when the earliest symptoms appear, is reported by The National Committee for Mental Hygiene, which has recently finished a nation-wide in-

ventory of existing facilities for the study and management of these conditions outside of institutions. This tendency is reflected in a marked growth in the number of mental hygiene and child guidance clinics established in various communities in the United States during the past ten years. In 1920 such clinics were comparatively rare. Today there are some 674 clinics which provide a regular mental health service to the public in thirty-four states, most of these having come into existence since 1922, when The National Committee for Mental Hygiene and The Commonwealth Fund first joined forces in the development of organized child guidance work. More than 50,000 children with all sorts of behavior disorders and mental problems were examined and treated in these clinics during the past year.

Health Work in Java.

The Government public-health service of Java sends out workers all over Java and neighboring islands with educational films showing how diseases are contracted, prevented, and cured. The development of nursing in Java has been very rapid during the last fifteen years. In 1930 there were no less than 800 locally trained nurses and 861 probationers. The girls begin their studies as early as sixteen years of age and are given a thorough course.

The Clinical Society of the New York Polyclinic Medical School and Hospital

Had the following program of papers scheduled for its meeting on the evening of April 4th:

1. Insulin in the Treatment of Tuberculosis (Preliminary Report). Case Reports—Frederick M. Allen, M. D.
   Discussion.
2. Remarks on the Adrenals in Their Relation to the Nervous System—S. Philip Goodhart, M. D.
3. The Constitutional Background of Graves' Disease, Allied Syndromes—John Carroll, M. D.
4. Principles Involved in and Clinical Aspects of Denervation of the Adrenal Glands—George W. Crile, M. D., Cleveland (by invitation).
   Discussion opened by Foster Kennedy, M. D.

General Discussion.

The reading of the papers and discussions were followed by an executive session and supper.

President-Elect of the A. M. A. to Speak in Roanoke.

Dr. Edward H. Cary, President-elect of the American Medical Association and prominent specialist in diseases of the eye, ear, nose and throat, of Dallas, Texas, will be the special guest on April 7th of the Gill Memorial Hospital of Roanoke, Va. Following a dinner at the Roanoke Country Club, Dr. Cary will give an address on "The Modern Doctor and His Relation to the Public," to the members of the Post-Graduate Class of the Gill Memorial Hospital and to doctors of that community.

Malnutrition of Children.

The National Organization for Public Health Nursing reports an increase in malnutrition from 18 to 60 per cent since 1928 for the children coming to a certain health center in New York City. One thousand fewer children than in 1929 were able to meet the "blue ribbon" standard of health of the Louisville, Ky., public schools. A nursing unit reported that many expectant mothers were unable to obtain even one glass of milk a day. Calls upon this unit for free milk had increased 41 per cent since 1929, many requests coming from families which had not formerly needed help. The demand for services of public-health nurses is increasing enormously, according to the national organization. At the same time many of the nursing units report reduction in budgets and staffs and in fees from patients.

The South Piedmont Medical Society

Will hold its regular semi-annual meeting in Danville, Va., the third week in April, under the presidency of Dr. C. W. Pritchett, of that city. As usual, this meeting promises to be quite interesting. Detailed information may be obtained from the president or from the secretary, Dr. George A. Stover, South Boston, Va.

Dr. Hugh S. Cumming,

Former Virginian and a member of the Medical Society of Virginia, early in March took the oath of office as Surgeon-General of the U. S. Public Health Service for the fourth time. Dr. Cumming entered the Service thirty-eight years ago and has been Surgeon-General since 1920.

Dr. W. H. Batte,

Formerly of Penns Grove, N. J., is now connected with the medical staff of the Norfolk and Western Railway, and is located at Williamson, W. Va. Dr. Batte is an alumnus of the Medical College of Virginia.

European Clinic Tour.

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Dr. A. S. Lilly

Has returned to Richmond, Va., after studying for two years in the University of Pennsylvania Graduate School of Medicine. He has offices in Medical Arts Building and is limiting his work to internal medicine.

Dr. George H. Snead,

Richmond, Va., who has spent several weeks studying at the University of Vienna and at Budapest, will tour in Italy, Switzerland, France and Belgium, during April. He will return to Richmond about the middle of May.

Porto Rico's Bureau of Women and Children.

The Porto Rican Legislature at the 1931 session created a department of labor for the island which includes a bureau of women and children in industry. The bureau is authorized to investigate and report concerning the welfare of working women and children and to plan for improvement in their conditions.

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Hourly Nursing Service.

The Private Duty Nurses' Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

For information, dial 3-1656. (*Adv.*)

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Obituary Record

Dr. Edward S. Hart

Died at the home of his daughter in Bedford, Va., February 29th. He was eighty-three years of age and a graduate from the Western Reserve University, School of Medicine, Cleveland, Ohio, in 1873. After a private practice in Minnesota for some years he entered the government service as a physician in the Indian department and continued in this work until his retirement in 1915, at which time he became a resident of the Elks' National Home in Bedford. He had spent the last year and a half in the home of his daughter.

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A STUDY OF THE LUNG INVOLVEMENT IN HUMAN ASCARIASIS.*

FRED J. WAMPLER, M. D.,
and
L. E. SUTTON, JR., M. D.,
Richmond, Va

In 1916 the discovery was made that ascaris ova hatch in the small intestines, migrate almost immediately through the intestinal wall and, through the blood stream, heart, and liver, reach the lungs. From the capillaries of the lungs, they work their way out into the alveolar spaces and thence through the bronchioles, bronchi, and the trachea to the throat. From the pharynx they enter the intestines by way of the esophagus and stomach. (Stewart, 1916.) This work was later confirmed by others. (Ransom and Foster, 1919; Yoshida, 1919.) It has also been shown that if the host is a suitable one for the ascaris, the young worms will settle in the intestines and develop to maturity.

The lung pathology in experimental animals shows bright red hemorrhagic spots at points where the larvae break out. One entire lobe of lung may be involved, or all lobes of both lungs. It may resemble either lobar or lobular pneumonia. In some specimens tissue eosinophilia is very marked. There is an extensive literature on the pathology in this condition. Any one interested is referred to that for detailed descriptions.

Since the above discovery and publications, doctors in endemic areas have occasionally considered that pulmonary conditions in children were due to ascaris larvae migrating through the lungs. Some cases of actual pneumonia have been assigned to this cause. Pig ascaris (*A. suum*) are very closely related to *A. lumbricoides.* Young pigs in endemic areas of pig ascaris (Ransom, 1919) die of a disease known as "thumps," the symptoms of which are similar to a lung condition produced experimentally in pigs by ascaris larvae migrations. Since the pig ascaris can produce a pneunomia in pigs, by analogy it would seem reasonable that human ascaris might produce a similar condition in the human.

There are a few experiments on human beings recorded. A volunteer, a man thirty-two years of age, who had been free from ascaris infestation for at least twenty years, took by mouth a small number of ascaris ova, about one-third of which contained mature embryos. (Lutz, 1888.) It was estimated that about one hundred viable ova were swallowed. Early in the experiment Lutz states the man suffered from acid dyspepsia, with vomiting and a slight fever, and, in addition, an unusually severe bronchitis developed.

A German physician, Mosler (quoted by Ransom, 1919, and Steiner, 1920) fed ascaris eggs in numbers up to several dozen to healthy children of various ages. In some of the cases Mosler observed that the children, a few days after the eggs were fed to them, suffered from fever and difficulty in breathing. He did not think these symptoms were due to the experiment. However, since Stewart's discovery and experiments by others, it seems possible that the breathing difficulties experienced in both Lutz's and Mosler's cases were due to the ascaris larvae migrating through the lungs.

A Japanese worker (Koino, 1922), experimented upon himself and his brother. He fed to his brother, a healthy man twenty-one years old, 500 embryonated eggs of *Ascaris suum.* He himself ingested several weeks later about 2,000 embryonated eggs of *Ascaris lumbricoides.* The results obtained by ingesting the ova are fully described in his report. From one to two weeks after the ingestion of the ova, both subjects showed respiratory symptoms varying in degree and accompanied by

*From the Departments of Preventive Medicine and Pediatrics of the Medical College of Virginia. This study was assisted by a grant from the Committee on Scientific Research of the American Medical Association.
The writers here wish to thank Drs. O. G. Fritz and C. G. Power for assistance in the clinical and laboratory work on the field, Dr. W. R. Culbertson, Director of the Wise County Health Department, for providing a place for the laboratory work and for other assistance, Dr. E. P. Cox and other members of the Wise County Medical Society for cases referred for study, Drs. W. W. Cort and G. F. Otto for advice before, during, and since the study, the Norton Hospital for taking X-ray pictures, the Virginia State Board of Health Branch Laboratory at Norton for bacteriological work, and Dr. A. L. Gray for reading the X-ray negatives.

toxemia. Koino, having swallowed the greater number of eggs, showed severe respiratory symptoms; also, upon examination of his sputum, many ascaris larvae were found. Fifty days after the test feeding, 667 immature ascarids were recovered from the feces following anthelmintics. The size of the worms varied from 30 to 80 mm.

There are a few cases with lung symptoms reported in the literature. A case was reported (Steiner, 1920), of a child six years old which had three attacks of fever and difficult breathing lasting for two to three days each. For about a month after these attacks the child passed a few immature ascarids occasionally, generally after the administration of an anthelmintic. In Samoa (Armstrong, 1923-1924), cases are frequently seen of the broncho-pneumonic type of ascariasis in children. A case was described (McKibben, 1919) with typical symptoms of pneumonia but with no positive findings. This case on treatment passed 370 parasites more than an inch and a half in length and many smaller than this.

Since an ascaris pneumonia occurs in pigs in areas where pig ascaris is endemic, and since it has been produced experimentally in many laboratory animals and also in man, the question arises as to the amount of lung involvement that we may get in human infestations brought about in the usual way.

Time, Place, Economic and Sanitary Conditions, Weather, and Cases Selected

For the purpose of this study in the summer of 1930, two villages were selected in Wise County, a mountainous district in Virginia. The staff carried on field investigations from June 24 to August 12, 1930. These villages, Ramsey and Hawthorne, were selected because two years before Dr. W. W. Cort and his co-workers (Cort, Otto, and Spindler, 1930), made a survey of ascaris distribution in southwest Virginia, and found the inhabitants of these villages more heavily infested than other groups studied.

The town of Ramsey had been a sawmill camp and the people remaining there made a living as best they could. Some of them worked in the mines and others at odd jobs that they could pick up. Some of them had tracts of land on which they raised many of their own vegetables and some grain. Hawthorne was a mining town, the houses of which were owned by the mining company and rented to the employees. Most of the houses were in a bad state of repair. These people also had gardens from which they obtained some vegetables.

The average income for these families was about sixty dollars a month. That had been the average income for the last two or three years. Out of this the man had to pay his house rent, averaging about six dollars per month, feed, and clothe his family. Boys above fifteen years of age usually worked in the mines or at odd jobs, thus increasing the family income, but many families, with two parents and five or even six children, depended solely upon the income of the head of the house.

The sanitation in both towns was much the same. Most of the houses had privies in connection with them, but they were on an average of thirty or more yards from the house and, in some cases, there was no path leading from the house to the privy, which meant that the privy was seldom used.

The houses usually consisted of two or three rooms, seldom four. There were often two double beds in each bedroom. In some cases there were also one or two beds in the kitchen. Only one house in the group was screened at all adequately. The houses were usually built on stilts. Often one side of the house was considerably above the ground. The children played under the house and it was frequently used as a place for defecation. Fecal material was often seen under these houses and sometimes a child would be seen there in the act of defecating. The ground beneath the house was generally moist and shady and made an ideal place for the embryonation of ascaris eggs, and a likely place for the children to pick them up after they were embryonated. Fecal pollution was often seen about the back porch and in other parts of the yard. Cort and his co-workers, two years before, found seventy-three ascaris and two trichuris eggs with motile embryos in three grams of soil samples taken from the yard of one of the families included in this study. In size the families ranged from one to seven children.

Weather conditions are important in a study of this kind. The summer was dry over the most of the eastern section of the United States but the Ramsey-Hawthorne area had more rain than most sections of Virginia and the rainfall was rather evenly distributed through the

summer. While the rainfall was less than the average for that section, which may have meant a retarded embryonation of ascaris eggs, at the same time it lacked the hard dashing rains which, in ordinary years, would have washed away much of the surface pollution. It is possible that a season with more rainfall and moisture would have produced heavier infestations by increased embryonation or by limiting the distribution of the seeding of intestinal ova, and also limiting the playground of the children to these seeded areas, thus producing heavier doses of embryonated ova.

Within these two towns, ninety-seven children, ages ranging from six months to fourteen years, and two adults, representing twenty-seven families, were chosen for study. Eighty-six per cent of the subjects studied were under twelve years of age.

Investigative Technique

Quantitative parasitic ova counts were made at the beginning of the study and from three to four weeks later on all cases studied. Additional counts were made on some of the individuals. A large increase in ova might have been coordinated with a previous severe bronchitis or pneumonia. For counting intestinal parasite ova the displacement option (Stoll and Housheer, 1926), of the Stoll dilution egg counting technique (Stoll, 1923), was used. In making the counts, a small drop (0.075 c.c.) was used on a 2x3 inch glass slide with a 22x30 mm. cover slip. The constituency of the stools was classified as in the study of Cort and his co-workers. Two counts were made on each stool sample by different members of the staff and the average results recorded.

The Baermann test (Baermann, 1917; Cort, Ackert, Augustine, and Payne, 1922), has been of service in isolating small motile larvae of certain nematodes that would pass screens. It was used on the stools in this study in the hope that if small viable ascaris larvae were being passed they might be found in this way. Numbers 20 and 40 screens were used to get larger larvae and immature ascarids.

It was impossible to obtain sputum from the smaller children, but when there were positive lung findings in older children and adults, all the sputum was obtained when possible. This was examined carefully for ascaris larvae, stained for tubercle bacilli, and cultured for other organisms.

White blood cell and differential counts were made to see if any help could be obtained from the eosinophiles in diagnosing ascaris lung involvement. Two hundred cells were counted in each case. Although it was realized that many of the cases with larvae migrations would already have a worm burden in the intestines and, therefore, most probably have an eosinophilia, it was thought that some help might be had on very young children or in children just moving into an endemic ascaris area by a differential count. The differential blood counts were made from one to ten days after the first stool specimen and some ten or more days before the second stool specimen.

Treatment, with careful screening of stools, was planned in the hope that immature ascarids corresponding in growth to the period of time elapsing since a previous pulmonary condition would be found. This condition would be suggestive, at least, that ascaris migrations had caused the lung condition.

Histories were taken on all the cases selected for study and physical examinations given at the beginning of the study. Chests were re-examined and other examinations were made as indicated during the progress of investigation.

Findings

The histories taken on these cases gave, with the exception of the passage of worms, essentially nothing more than would be expected from a similar group of subjects who had not had the history of worms. Practically all the cases gave a history of passing worms, their first appearance coming usually when the child was two years of age. Forty-four per cent of the cases gave a past history of sore throat and 9 per cent of pneumonia. Thirty-one of the ninety-nine, or 31 per cent, gave the history of enuresis after the age of two years. This high incidence may, in some cases, be attributed to the presence of worms but is much more likely due to carelessness of habits and poor training. There were about as many families who gave the history of enuresis not being present as did, and when enuresis was present, the majority of the children of that family were offenders, regardless of age.

The following were the principal findings in the physical examinations: Tonsils were noted in each case. Three had had tonsils removed, forty-eight showed tonsils even with pillars or sunken, and forty-eight had tonsils

projecting beyond the pillars. In five of the latter, the tonsils touched the uvula. In forty-six cases, one or more carious teeth were noted. The lymph nodes did not show any generalized enlargement.

At the first examination forty-one showed rhinitis, and during the next six weeks, twenty-six additional cases developed this condition, which made a total of sixty-seven out of ninety-nine, or 68 per cent. Rhinitis occurred chiefly as multiple cases in families, indicating the infectious nature of the inflammation. Seven of the cases had a rhinitis all summer; other cases lasted anywhere from one to nine days. In twenty-nine cases the rhinitis was accompanied with a cough. Nine of those showing cough with rhinitis had physical signs in the chest, such as scattered rales. The ages in this group varied from six months to eleven years. These cases had a clinical picture of upper respiratory infection.

Nine cases, or 9 per cent, had a cough, which, together with the coughs with rhinitis noted above, made a total of 38 per cent with cough.

Five in a family of nine, the mother and four children, ages seven, ten, eleven, and thirteen, had a cough at the same time. Two other children, ages two and four, had rhinitis but no cough. Only the father and a small baby escaped the infection. This family appeared to have an upper respiratory infection infecting almost the whole family at the same time. The entire family was poorly nourished and mentally dull. The mother had a definite pneumonia. The four children with cough were up and around but coughed a good deal and raised much sputum. Rales were found intermittently. The sputum of the five was repeatedly examined for ascaris larvae with negative results.

Four other cases belonged to another family, children aged six, nine, eleven, and fourteen, respectively. The cough was hacking in character, occurring chiefly at night for a few nights. Chest findings were negative. No sputum from these patients was obtained. There was a history of tuberculosis in both the mother and father. All of this group with chest findings or cough with chest findings showed ova in the stool.

One case, age six, showed signs of asthma and rhinitis the whole six weeks of observation. The asthma may have been due to the accompanying sinusitis that was present.

Diarrhoea occurred in thirty cases, the duration of which varied from one day to a mild diarrhoea lasting for six weeks. The severer diarrhoeas were in the smaller children. Sixteen out of the thirty were ages two and under. Seven of these sixteen had no ova in the stools. All the diarrhoea cases five years of age or under gave a history of drinking milk. The milk supply was produced locally, usually being obtained from neighbors. There were no means of keeping milk cold as refrigeration was not present in a single household. In most of these cases the clinical picture was the same as that of the ordinary summer diarrhoeas. Boiling of milk and the use of buttermilk helped somewhat in stopping the diarrhoeas. The most obstinate cases were cleared up by the substitution of evaporated milk for the cows' milk.

Two cases, ages two and three, whose complaint was that of loss of appetite, lassitude, irritability, drowsiness, inactivity off and on, with some days better than others, and who showed numerous ova with nothing more to show for the symptoms, had their milk supply changed to evaporated milk with the result that the symptoms cleared up.

Vomiting was present in fourteen cases. In twelve of the cases, vomiting could be explained by an acute infection or associated with a severe diarrhoea. The other two cases vomited once each and expelled worms.

Underweight and undernourishment have been attributed to ascaris infestation. The weight and height of sixty-six out of the ninety-nine cases studied were obtained. The majority of these were underweight but the economic factor must have had much to do with this condition.

Table No. 1

SHOWING NUMBER OF CHILDREN IN EACH AGE GROUP STUDIED, THE NUMBER POSITIVE FOR ASCARIS EGGS IN EACH GROUP, TOGETHER WITH THE AVERAGE NUMBER OF EGGS FOR ALL CASES AND FOR ALL POSITIVE CASES IN EACH GROUP.

Age group	No. in group	No. positive for ascaris ova	Eggs per gram of feces	
			Average for all cases in group	Average for all positive cases in group
0– 4	31	19	23,752	38,752
5– 9	43	40	44,084	47,180
10–14	23	23	35,382	35,382

Other symptoms and signs, which can be found over a period of time in any observed group, appeared in smaller percentages.

The figures in Table No. 1 are from the counts made on feces collected the last of July. The table shows what a large per cent of the cases studied had a worm burden in the intestines. Since each ascarid roughly represents 1,000 eggs per gram of feces (Brown and Cort, 1927), the average number of worms for the positive cases would be around thirty-five for the 10-14 age group and forty-seven for the 5-9 age group.

None of the cases under two years of age showed any ova in their feces, although one of these, age fifteen months, passed a round worm which was reported by the mother of the child during the period of investigation. Several of the children who had ascaris ova on the first count failed to show them on the second count, and a number who did not have ascaris ova on the first count showed them on the second count.

Table No. 2

Showing average ascaris ova counts in all cases positive in both first and second counts.

Age group	No. positive	Average ascaris ova in one gram of feces	
		First count	Second count
0– 4	17	32,823	40,982
5– 9	36	44,181	52,422
10–14	21	29,529	38,471

Table No. 2 shows the average egg increase of the cases positive on both the first and second counts. The first count was on feces collected the last of June and early July, while the second represents stools collected the latter part of July.

The highest individual count was on a child age ten who had 235,200 ova per gram of stool. The second highest was on a child age five who had 213,600, and the third was a child age eight who had 213,200. The fourth and fifth were on children ages seven and four with 206,000 and 201,000, respectively. In the above, the second and third were a result of the first count while the other three were found in the second count.

In this study the heaviest average infestations were in the ages from five to nine, inclusive, and the average number of eggs increased as the summer went along. A number of these children had passed worms during the course of study, but, in spite of this, most of them showed an increase in ova counts. This would suggest that there is a constant turn-over in worms with perhaps an excess of the intake over the loss during the summer months. This ascaris turn-over is in general agreement with the findings of Otto (1930) on the children in these two villages. Keller (1931) reporting on work done in an institution near Nashville, found all the ascarids disappearing from children, 6.5 per cent of whom were infested, in fourteen months time. These children were living in a good sanitary environment.

The average eosinophilia for the eighty-four included in Table No. 3 is 10.19. This is a higher eosinophilia than that shown in a recent study on 107 white and sixty negro patients in Tennessee (Keller, Casparis, and Leathers, 1931), and the ascaris ova count average in this series is less than that in the Tennessee study.

Table No. 3

Showing the average differential count by age group on all cases positive for ascaris ova.

Age groups	Average age	No. of individuals counted	Neutrophiles	Lymphocytes	Eosinophiles	Others
0– 4	2.95	21	41.3	47.8	9.57	1.33
5– 9	6.78	41	39.0	49.0	10.5	1.5
10–14	11.7	22	42.0	46.4	10.2	1.6

The above group gives the more extreme findings. Case 91, with the second highest ascaris ova count in the entire series, showed only 2 per cent eosinophiles, while case 42, with a comparative high ascaris ova count, also had 2 per cent. Case 38, with a very low ova count, had 30 per cent eosinophiles, the highest recorded in the series, and case 60, who had no ova on first count and only a few in the second, had an eosinophilia of 25 per cent. While only nine of the extreme cases were selected for the table, there were others that ran much like these. For the group, however, there is a definite eosinophilia and this must be associated with the ascariasis. It should be mentioned that an individual with low ova count

Table No. 4

Some of the extreme cases showing lack of relationship between eosinophile counts and worm burdens.

Case No.	Age	Sex	Ascaris ova per 1 gram feces		Differential white cell count			
			First count	Second count	Neutrophile	Lymphocytes	Eosinophile	Others
2	5	M	50,800	188,200	30	48	21	1
38	7	M	2,000	600	32	37	30	1
42	6	M	112,800	.....	48	50	2	0
48	7	M	14,600	55,200	49	30	21	0
60	6	M	.....	400	21	52	25	2
66	2	M	8,200	22,000	21	55	24	0
72	6	M	42,800	50,800	28	67	5	0
75	14	F	83,100	73,600	44	49	5	2
91	5	F	213,600	107,400	42	54	2	2

and high eosinophile average might have a large number of sexually immature or male worms, or ascaris larvae might be migrating through the lungs, or there might be some other eosinophile producing condition.

Intensive Study

Nine of the cases were selected for special study during the last three weeks. Five cases were selected which had had positive lung findings. Two of the five cases with positive lung findings were adults, mothers of children with heavy infestations. Both of these adults had had lung complications during the summer; one a pneumonia in the lower right lung and the other a bronchitis. This latter adult gave the history of having had tuberculosis. During the study, she had an attack of what appeared to be broncho-pneumonia. Acute symptoms lasted about a week. The cough, with the production of sputum, lasted until the end of the study. The sputum on repeated examinations showed no ascaris larvae or tubercle bacilli and fecal examinations showed ascaris ova but no larvae or mature ascarids were passed. Eosinophiles ranged from 9.7 per cent to 6.3 per cent, the latter being the count after all active symptoms had subsided.

Of the three children in this special study who had had lung findings before their selection, one was a child, age two, (case 32) who had been quite ill with vomiting, diarrhoea, and bronchitis. On July 7th, high pitched musical, crackling, and crepitant rales were heard over the chest and this continued for a period of six days.

The second child with positive lung findings in the chest was case 5, who on July 18th had a cold with severe coughing. A few whistling rales were found on the left side anteriorly at the base of the lungs. On the right side, whistling and crackling rales were heard in the anterior sixth and seventh inner spaces. The rales had cleared up the next day, but the cough continued for several days.

The third child with lung findings was case 60, who had high pitched rales in upper chest on both sides, a loose cough with expectoration, and a nasal discharge present during the whole period of observation. This boy had passed four immature ascarids at the beginning of the sickness.

The other four children selected had had no symptoms from the beginning of this study, the 24th of June, until the beginning of this special study, the 21st of July, but they were living in such indescribably filthy conditions that they were included in this special study as being likely subjects of rather frequent migrations. One of the cases carried a very heavy load of mature ascarids, having an ascaris ova count of 213,600 in the early part of July.

These nine cases were seen every day by members of the staff and, if any variation from the normal was noted, the individual was checked over carefully. Where sputum could be obtained, it was examined for tubercle bacilli, cultured for other bacteria, and each specimen was examined carefully for ascaris larvae. All the feces passed during this period were collected and Baermann tests were done to see if ascaris larvae could be obtained. The feces were then run through No. 20 and No. 40 sieves to get out immature and mature ascarids.

Differential counts on the white cells were made each week. Quantitative stool counts were made on each case at least once during this period.

X-ray examinations were done on five of the children, two of whom had positive lung findings during the study and three who had none.

In all of these nine cases, no ascaris larva was found in the feces. Motile larvae should have been recovered by the Baermann. Dead larvae might have passed through the finer

sieves. The smallest ascaris found in this group of nine was 57 mm. in length.

Most of these cases passed some mature ascarids before treatment and, with the exception of the two-year old child, all passed ascarids after treatment. Three of the four showing no lung symptoms passed larvae of *Strongyloides stercoralis.* One had no ova; two had ascaris ova only; three had ascaris ova and one other type of intestinal parasite ova; one had ascaris ova and two other types; and one had ascaris ova and three other types. One of those showing only ascaris ova had pin worms, which were found on screening the feces. One of the cases showing ova of two parasites and both of those showing the three and four types of ova also had strongyloides.

The report of the roentgenologist on the five cases X-rayed is as follows:

Case No. 5—Calcified lymph nodes and inflammation are seen in both hila. Calcified tubercles appear along left ascending bronchial branches, but few are seen in lower bronchial branches on left and upper bronchial branches on right. This patient has slight hilum and bronchial tuberculous infection mostly healed.

Case No. 17—Calcified lymph nodes in and around both hila along bronchial branches are found both above and below. Hilum and bronchial infection tuberculosis or the sinus infection or both will account for appearance.

Case No. 60—Scar tissue is seen in hilum with calcified lymph nodes but no details in lungs can be made out. Patient did not hold breath—both films blurred. Picture can be accounted for by asthma and hilum tuberculosis or chain infection from sinus involvement.

Case No. 81—Patient did not hold breath but there is an inflammatory deposit in hilum with few calcified lymph nodes. The findings may be due to hilum tuberculosis involvement or excessive sinus infection.

Case No. 91—On right side there is marked inflammatory thickening in and about right hilum. Numerous calcified lymph nodes are seen in and around hilum. An occasional calcified tubercle was seen along descending branches. Left lung shows irregular area, somewhat blurred, visible through third and fourth front interspaces due to some form of infection. Location not characteristic of tuberculosis, but may easily be accounted for as interstitial tubercular area. Certainly seems to be hilum and bronchial tuberculous infection.

Treatment was attempted on more than half the cases but, due partially to lack of cooperation on the part of the patients and partially to the drug used, the results were unreliable.

Summary and Conclusion

Histories on ninety-nine persons studied, 86 per cent of whom were under twelve years of age, with the exception of the passing or vomiting of worms, gave nothing essentially different in their histories from what would be expected in a similar group of children in the same economic and social stratum. Enuresis was reported after two years of age in 31 per cent of the cases.

Physical examinations during the period of study showed 68 per cent with rhinitis and 38 per cent with cough. One child and two adults developed pneumonia. Repeated examinations of sputum obtained from the pneumonias and those with cough failed to show ascaris larvae.

Diarrhoea occured in thirty of the patients, seven of whom had no ascaris larvae in the stools. Vomiting was present in 14 per cent.

The average ova counts averaged higher on the second count, which was made from stools collected approximately three weeks later than the first. The heaviest infestations were in the five-nine years age group.

While the eosinophilia varied in the different cases, the eosinophiles averaged 10.19 per cent and seem to be definitely associated with ascariasis.

Intensive studies on nine cases gave no proof of lung migrations. Two cases with pneumonia showed no ascaris larvae in the sputum and Baermann tests and screens failed to get any ascarids excepting those that might have passed the lungs before this study began. X-ray examinations on five of the cases showed conditions which might have been accentuated by ascaris larvae migrations, but could be accounted for in other ways.

Some of the bronchitis found in this study may have been due to ascaris larvae migrating through the lungs but it can be explained by an upper respiratory infection, such as the common cold, which was present at the time of the examinations. No positive evidence was obtained that the lung conditions found were due to ascaris migrations.

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DIFFICULTIES ENCOUNTERED IN THE ETIOLOGICAL DIAGNOSIS OF AORTIC REGURGITATION.*

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This study is based on an attempt to properly evaluate the methods commonly available for the formation of an etiologcal diagnosis in cases of pure aortic regurgitation. Prior to the advent of the Wassermann reaction in the early part of this century little emphasis was placed on the part played by syphilis in the production of the condition. Medical opinion at once inclined to that disease as the causative factor in the great majority of cases. However, in late years we have come to a realization of the fact that in many patients with aortic regurgitation it is impossible to obtain evidence by either clinical or post-mortem studies that incriminates syphilis as the etiological agent. Although it remains obvious that syphilitic infection is the undisputed cause in the greater number of instances, sclerotic processes of obscure origin involving the aortic valve are claiming more and more attention.[1, 2, 3, 4, 5] Although the literature of the past decade reiterates the need for accurate diagnosis in these cases little stress seems to have been laid upon the practical difficulties attendant upon such effort. An attempt will be made to outline briefly some of the major problems; to formulate approximately the degree of accuracy that may be anticipated from simple clinical procedures, and to discuss the aid furnished by more exhaustive studies of aortic regurgitation.

No effort has been made in this study to ascertain the relative incidence of pure aortic regurgitation as compared with single or combined lesions of other valves. Insufficiency of the aortic valve alone has been reported by various authors as occurring in 25,[6] 13,[7] 14,[8] and 22[9] per cent of all valvular lesions.

Aortic regurgitation has been said[10] to result from the following conditions: (1) Rheumatic endocarditis with ulceration, fibrosis, and contracture of the valve leaflets; (2) syphilitic

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ulceration and erosion of the valves or dilatation of the aortic ring in aneurysm of the ascending aorta; (3) arteriosclerosis of the aorta when there is imperfect closure of the leaflets; (4) rarely hypertensive heart disease with functional dilatation of the aorta and aortic ring; (5) occasionally severe anemia; and (6) rarely trauma. To these factors may be added as rare occurrences, congenital malformations, and acute bacterial invasion of the valve leaflets.[11]

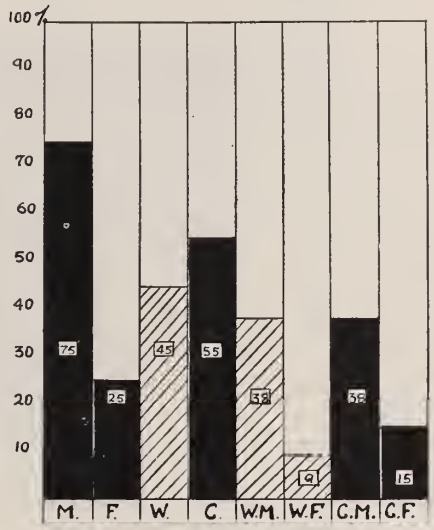
It is obvious that all of these conditions must be kept constantly in mind in a consideration of the cause of each case of aortic valve failure. There is but rarely any quality in the sound of the regurgitant murmur which aids us in the determination of the primary cause by which it has been initiated. The etiology of the underlying process must be found through a study of secondary considerations. These include a history or the finding on physical, laboratory, or X-ray examination of evidence of associated disease in the heart or elsewhere in the body. There may be a complete absence of such confirmatory data, or such a confusion of associations as to leave us in utter bewilderment.

Material for this study has been obtained from the records of 125 patients who have been admitted to the University of Virginia Hospital during the past few years. These patients were all diagnosed as having *pure* aortic regurgitation. The diagnosis was based upon the presence of the diastolic murmur characteristic of that disease.[12] No case was utilized in which aortic stenosis or combined valvular lesions were demonstrable, nor were cases included in which the structural diagnosis was made less certain by the presence of a supposed Austin-Flint murmur.

These 125 cases were arbitrarily divided into three etiological groups—all the result of syphilitic, doubtful, and rheumatic factors. The criteria employed in the formulation of each diagnosis were the usual factors incident upon a diagnosis of the various conditions causing aortic valve failure. In the syphilitic group a suggestive history, a positive blood or spinal fluid Wassermann reaction, or the evidence of syphilis in the aorta or elsewhere in the body were deemed sufficient to effect a tentative diagnosis. A history of rheumatic fever in younger persons and in the absence of syphilis was considered as an indication of the rheumatic origin of the disease. The group designated as "Doubtful" consists of a *few* cases in which the underlying factor was probably syphilitic or rheumatic infection, and a much *larger* group of cases to which no definite causative factor could be ascribed. We wish to direct particular attention to this doubtful group which comprises over one-third of the total cases in the series. In it are included those instances of aortic regurgitation so frequently characterized as being of arteriosclerotic origin. It would seem from a review of the recent literature[2, 3, 4, 5] that postmortem studies often fail to confirm clinical diagnoses of arteriosclerotic aortic regurgitation, and pathologists apparently differ widely in their interpretation of the atheromatous changes which may be found involving the aortic valve. Failing to demonstrate syphilis or rheumatism as a cause it appears possible that we have become too prone to ascribe to arteriosclerosis a major role in the production of an appreciable number of aortic valve defects.

A partial analysis of the 125 cases which have been chosen for study appears in the accompanying tables. Patients were distributed according to sex and race as shown in Table I. The male to female ratio of 3:1 is

TABLE I



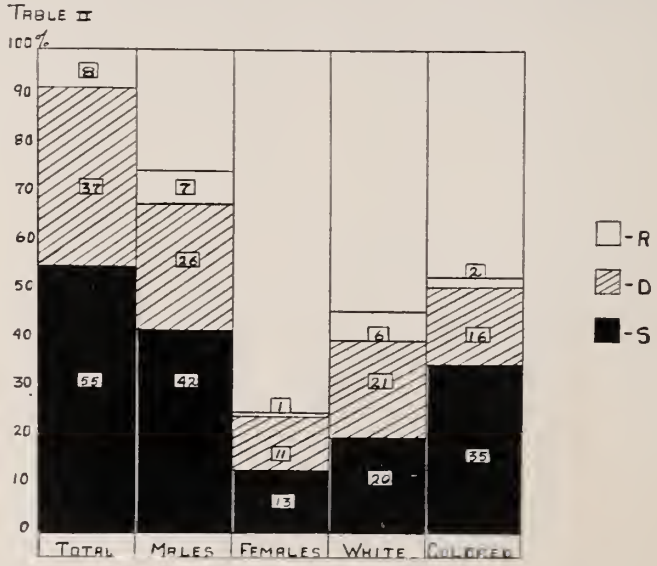
SEX AND RACE INCIDENCE IN AORTIC REGURGITATION

M., Male; F., Female; W., White; C., Colored; W. M., White Male; W. F., White Female; C. M., Colored Male; C. F., Colored Female.

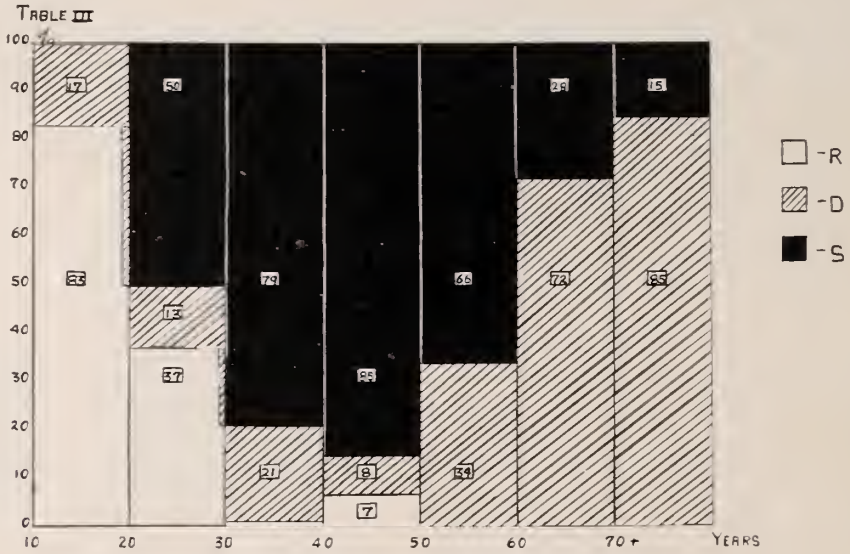
in accord with the observations of other writers.[13] The ratio of colored to white patients is 5:4, a relationship which increases to 5:1

when corrected for the proportion of colored to white admissions (1:4) at this hospital.

An etiological grouping according to total number of cases, sex, and race (Table II) forms an interesting contrast. It is at once obvious that syphilis is the predominant factor in the production of aortic regurgitation, representing 55 per cent of the patients in this series. Rheumatic infection seems clearly to account for 8 per cent, whereas the remaining 37 per cent comprise the group previously referred to as of doubtful causation. In an analysis of 327 cases or aortic regurgitation Harmer[14] concluded that 50 per cent were the result of previous syphilitic infection; 17.5 per cent of rheumatic origin; and 32.5 per cent of uncertain or mixed etiology. It will be observed that a syphilitic origin of the disease is almost twice as common in colored as in white patients.



ETIOLOGICAL DISTRIBUTION OF 125 CASES OF AORTIC REGURGITATION
S., Syphilitic Group; D., Doubtful; R., Rheumatic.

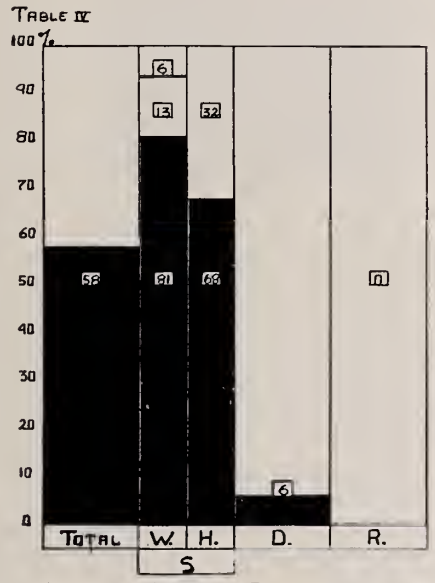


AORTIC REGURGITATION -- ETIOLOGY BY AGE INCIDENCE
S., Syphilitic Group; D., Doubtful; R., Rheumatic.

In Table III the age distribution of etiological groups is charted in percentages of total cases appearing in each ten year period. The tendency of rheumatic infection to cause de-

monstrable valvular disease in early life, the menace of syphilis in the middle decades, and the advent of sclerotic and degenerative changes coincident with old age are graphically portrayed. In approximately 10 per cent of the total number of cases studied there was evidence of both syphilitic and rheumatic infection as possible factors in the production of the valve defect. These cases account for those doubtful groups occurring in the earlier age periods.

omitted or lost in 6 per cent of cases. The spinal fluid Wassermann examination was done in thirty-seven patients and was positive in eight, four of these having a negative blood serology. In the syphilitic group of sixty-nine patients, 68 per cent gave a history of syphilis, and 48 per cent a history of primary or secondary lesions. These figures stress eloquently the value of a careful history and routine serological examinations in patients who present evidence of aortic disease.



EVIDENCE OF SYPHILITIC INFECTION IN ETIOLOGICAL GROUPS

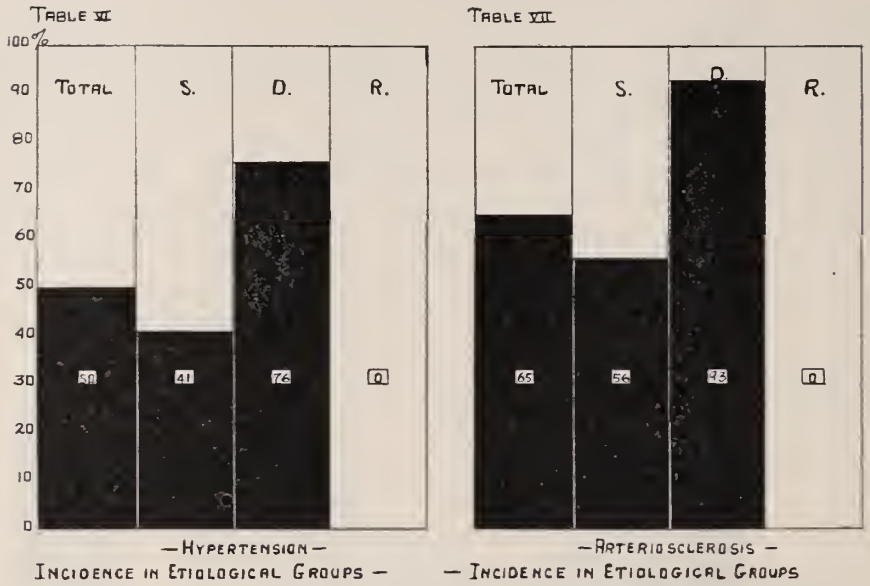
EVIDENCE OF RHEUMATIC INFECTION IN ETIOLOGICAL GROUPS

W., Wassermann; H., History of Syphilis; D., Doubtful; R., Rheumatic.

Table IV deals with the evidence of syphilitic infection in the total series and in the various etiological groups. There were indications very suggestive or conclusive of syphilis in 58 per cent of the 125 patients studied. Of these, three patients with direct evidence of syphilis are placed in the "Doubtful" category, and constitute the 6 per cent listed in that group. One patient, aged fourteen, had congenital syphilis, a strongly positive blood Wassermann reaction, and a definite rheumatic history. The others were men in the middle age period, one in whom an aortic regurgitation was observed concomitantly with the occurrence of a chancre, and another who developed a primary lesion five years after the appearance of the aortic defect. That reinfection in syphilitic patients is a rarity has been noted elsewhere.[15] In the syphilitic group, the blood Wassermann reaction was positive in 81 per cent, negative in 13 per cent, and

Table V presents the percentage history of rheumatic infection elicited in the various etiological groups. It will be noted that 16 per cent of the total series furnished evidence of a rheumatic diathesis. All cases in the rheumatic group had had rheumatic fever.

The incidence of hypertension and arteriosclerosis in the total number of cases and in the three diagnostic groups is illustrated in Tables VI and VII. A systolic blood pressure of 170 mm. Hg. (or over), or a diastolic blood pressure of 100 mm. Hg. (or over) was arbitrarily conceded to be indicative of hypertension. It will be observed from Table VI that an elevation of blood pressure was found in 50 per cent of the total cases; in 41 per cent and 76 per cent of the syphilitic and doubtful groups, respectively, and in none of the rheumatic cases. Likewise, that arteriosclerosis (Table VII) was present in 65 per cent of the total number; in 56 per cent and 93 per cent



S., Syphilitic; D., Doubtful; R., Rheumatic.

of the syphilitic and doubtful groups respectively; and in none of the rheumatic group. These percentages appear slightly higher than those reported by other observers.[16, 17] The high incidence of hypertension and arteriosclerosis in patients with aortic valvular disease must be constantly borne in mind. The primary role played by these factors cannot be ascertained with any degree of accuracy in individual cases, although their effect on the progress of the disease is necessarily one of importance. That hypertension and arteriosclerosis present higher percentages in the doubtful than in the syphilitic groups is partially explained by the relative ages of the patients in these two classes.

The value of routine X-ray study as a diagnostic aid in aortic regurgitation has been shown elsewhere.[18, 19, 20, 21] Of the 125 patients observed in this series, sixty-six, or 53 per cent were examined by means of the fluoroscope and teleroentgenogram. The results of this study, in an abridged form, appear in Table VIII. Although statistical averages are misleading, particularly when applied to individual cases, it is thought that the values obtained in measurements of the aorta are significant. In our experience, the shape of the heart gives more information than a determination of its size which is dependent upon the duration of the disease, the extent of the valve defect, and other factors such as hypertension, the patient's occupation, and possibly the presence of chronic nephritis. The study of the contour of the aorta as observed by fluoroscopic examination is obviously a procedure of great value.[22]

TABLE VIII

Sixty-Six Patients With Pure Aortic Regurgitation Studied by Teleroentgenogram

	Number Cases	*Average Cardio-Thoracic Ratio*	*Average Width Great Vessels*
Syphilitic	44	59%	8.1 cm.
Doubtful	20	60%	6.9 cm.
Rheumatic	2	54%	4.7 cm.

Electrocardiographic studies have, up to the present time, furnished no direct aid in a determination of the etiology of aortic regurgitation.

Summary and Conclusions

One hundred and twenty-five patients with pure aortic regurgitation have been studied clinically with particular reference to the cause of the underlying valve defect. In sixty-nine cases (55 per cent) the aortic lesion was thought to be due to syphilis; in ten (8 per cent) to previous rheumatic infection. In forty-six instances (37 per cent), a causative factor could not be accurately determined.

The value of an etiological diagnosis in cases of aortic regurgitation cannot be doubted. The importance of a careful history is emphasized as an indispensable factor in the majority of syphilitic and rheumatic cases. Physical examinations should be completed with particular regard to the presence of conditions which might be associated etiologically with

the aortic defect. Exclusive of the serological tests for syphilis and X-ray studies of the heart further procedures are of little value.

At least one-third of all cases of pure aortic regurgitation present difficulties in diagnosis which are as yet not overcome by known clinical or post-mortem methods of study. By applying the ordinary methods of examination the average physician may effect an etiological analysis of this disease in a measure equal to that attained by more highly trained workers.

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THE TREATMENT OF POST-OPERATIVE INTESTINAL OBSTRUCTION.*

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This paper is based on a series of eight consecutive personal cases of post-operative intestinal obstruction which occurred at Stuart Circle Hospital in a period of three years and seven months.

The condition is one of great interest. After it is definitely established, it is invariably fatal unless relieved. It usually follows or is a part of the clinical entity of severe cases of appendicitis. This was true of six of the cases reported here. These patients usually come in vomiting and have a history extending as a rule over several days to a week, during which time they have had no bowel movement, or injudiciously have been given a purgative which has aggravated their symptoms and materially diminished their chances of recovery. When the circumstances permit an ideal appendectomy, that is to say, when the patient is seen early in the attack before any complications have set in, the operation is usually quite simple and is followed almost invariably by an easy recovery. When, however, we have to deal with the delayed severe cases, in many of which abscess or peritonitis of the lower abdomen has already set in, we are faced by as serious a problem as can confront the surgeon. It is our habit to operate on acute cases as soon as seen. All of the six cases in this paper belonged to the delayed class or were serious complicated cases that were recrudescences of old chronic cases.

Care in Operating.—Every effort is made to avoid invasion of the abdominal cavity except at the immediate field of operation. The coecum is identified and the base of the appendix is exposed and clamped with forceps. This point is usually the least involved and least friable. By making traction on this the appendix can frequently be lifted out or in any event its dissection is facilitated. It is not, as a rule, necessary to deliver any of the intestine through the wound except a portion of the coecum and terminal ileum. In this way the appendix is removed with a minimum disturbance of the abdomen. Where there is pus or peritonitis or difficult dissection we drain with rubber tissue. As a rule, the patient shows signs of immediate improvement and goes on to a satisfactory convalescence.

Development of Obstruction.—In a few of these cases, however, the vomiting persists, the discharge from the bowel is incomplete, the abdomen remains distended, and the patient suffers from abdominal pain. These symptoms are treated by what we term low gravity, that is, the lower bowel is flushed and drained by raising and lowering the enema can a few inches. Normal saline or 5 per cent glucose is used. A part of this is absorbed but when the can is lowered the fluid runs back and brings with it a certain amount of dissolved

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fecal matter and results in the expulsion of gas. It is a gentle process but, as a rule, is very effective in relieving distention. Nausea and vomiting are treated by gastric lavage or the insertion of a Juke's tube. The abdomen is treated by ice-bag, sometimes by hot stupes. If these means are not effective, or if they are effective at first and then cease to act, we have to consider other means of treatment. Sometimes the vomiting is persistent from the first and characteristic of gastric stasis, and there is no evidence of bowel action by the passage of feces and gas. In this case there can be no delay and immediate enterostomy is indicated. Unfortunately, however, there is often no definite line of demarcation. Many patients will appear to be entirely relieved and later have a return of symptoms, so that it is at times difficult to fix absolutely the time when enterostomy is indicated. We adopt the general rule to operate if the measures instituted fail to give relief or if the symptoms persist after apparent relief. What has been said applies to cases developing as a result of acute appendicitis, which is the most frequent cause, but obstruction may follow other operations. In that case the symptoms develop following the operation but are of the same character and consist primarily of reverse peristalsis and lack of bowel movement.

Pathology.—The pathology of this type of obstruction is interesting. Adhesions probably play an important part but this is not the sole cause. The most important factor is the distention of the intestines. This is induced by any operation in which the intestines are handled. It is quite customary for movement of the bowels to be deferred to the third day following all abdominal operations. This is done to allow the interference with peristalsis to subside. In grave cases even slight handling augments a condition that already exists and this is further increased by inflammatory inhibition about the ileo-cecal valve in cases of appendicitis. When the intestines become distended they often kink. The distention itself also interferes with proper peristalsis and this inhibition is further increased by the toxic contents of the bowels. Eventually and usually quite promptly after the obstruction has become absolute, the intestines become completely paralyzed, fever sets in and death. Dehydration and depletion of salt reserve as a result of excessive vomiting undoubtedly play an important part.

Treatment.—The essential thing in the treatment of obstruction is the removal of the intestinal contents. This is best done by enterostomy. The best site is the left rectus and the operation is done under local anaesthesia. No search for a point of obstruction should be made because the manipulation increases conditions already present and usually hastens death. Besides it is unnecessary. In all of the recovered cases reported nothing was done to relieve obstruction at the time of enterostomy and it was not necessary to do anything later. In the only death reported in this series the obstruction followed resection of the uterus for tumor. It was believed that it was due to an adhesion at the site of the operation. Ethylene was given and the adhesion was found and released. The distended intestine became eviscerated, necessitating considerable manipulation to reduce. An enterostomy was performed but the patient died in a few hours. A simple enterostomy under local anaesthesia would probably have saved her life.

Multiple Enterostomies.—The object of an enterostomy is primarily to drain the intestine. Unless drainage takes place and is continuous it will accomplish no good. It often happens, owing to the partially paralyzed condition of the intestine, that only a segment will drain and then the flow will stop. Several years ago I had a patient come to the hospital in apparently a moribund condition. She had had an operation two years previously for suppurating appendicitis and was taken with obstruction two days previous to entering the hospital. As her condition was very grave we determined to take two chances by performing two enterostomies. She recovered without operating for the obstruction and her bowels moved spontaneously. In five of the seven recovered cases two enterostomies were done, but in none of them were the two done simultaneously.

Treatment of Enterostomy Tubes.—In every case we irrigate the tubes frequently, usually every hour. We have used small quantities and large quantities and have found that as a rule a pint can be introduced comfortably if given slowly. The tube is then clamped for twenty to thirty minutes and then flow is allowed to take place. Five per cent glucose in normal saline is usually the fluid used. A large

part is apparently absorbed, contributing to the nourishment of the patient, and the outflow of the balance encourages the flow of feces. When two tubes are in use the hourly instillation is alternated.

Adjuvant Treatment.—The stomach must be kept empty by lavage or Juke's tube. We usually give gastric lavage at first and, if this has to be repeated, introduce a Juke's tube. Glucose is given intravenously if indicated, sometimes using a five per cent solution and sometimes the fifty per cent solution. Low gravity is practiced always to encourage evacuation through the bowel.

Hypertonic Salt Solution.—In the last two cases we have used hypertonic salt solution five per cent. In one case we gave three hundred c.c. intravenously and also five pints introduced through the enterostomy tube, giving one pint at intervals. In the other case one pint was given through the enterostomy tubes every hour until four pints were given. In both cases the tone of the intestine was immediately restored and there was a free discharge of normal bright yellow fluid feces through the enterostomy tubes and from the bowel. I have never yet used the hypertonic salt solution without previously having done an enterostomy.

Prophylactic Enterostomy.—I have never yet done an enterostomy at the time of operating on severe appendicitis, but it has occurred to me that it might be a good prophylactic measure. When vomiting is pronounced and the case is a delayed one, I believe it would be indicated.

Conclusions.—1. As the matter now stands, I believe that an entertostomy is the best treatment for post-operative obstruction.

2. If one does not drain satisfactorily, another should be done without undue delay.

3. Irrigation of tubes is indicated both to induce flow of feces and for nourishment.

4. Hypertonic salt solution administered either intravenously or through enterostomy tube has a powerful effect in re-establishing peristalsis in a partially paralyzed intestine and also in inducing a discharge of normal feces.

Report of Cases

1.—Mr. J. W. W. (33-421), age 50 years, admitted to Stuart Circle Hospital October 19, 1928, with a history of having attacks of appendicitis for some years and of having suffered on the day previous with another attack. Immediate operation was done and an appendix that was very much enlarged, reddened, edematous and covered with patches of exudate was removed, the wound being closed without drainage. Patient vomited bile and abdomen became distended and later hard. Vomitus became dark and offensive and he hiccoughed continuously, although he had some movement from the bowels. On the fifth day an enterostomy was done, and about a pint of feces was discharged through the catheter. He continued to vomit and hiccough, gastric lavage failed to relieve, and the enterostomy finally stopped draining. A left rectus enterostomy was done on the seventh day, and one pint of saline was put in alternate enterostomy tubes every hour, and he was given low gravity treatment. During the next night he drained two gallons through the enterostomy tubes, and on the next day his abdomen became soft and he recovered without further operation.

2.—Mr. W. T. R. (33-432), aged 26 years, admitted to Stuart Circle Hospital with a history of previous attacks of appendicitis and this attack came on day of admission. Immediate operation was done through right rectus and an appendix about size of little finger, grayish in color, densely adherent, was removed. In separating adhesions, appendix broke and there was a discharge of thin pus with fecal odor, and also of gelatinous material, evidently a mucocele. A rubber drain was used and wound closed. Following operation, wound drained freely. Patient vomited immediately after operation but this improved. He then developed abdominal pain and distention. An enema obtained good results, but abdomen remained distended, and he began to vomit again, and this became brown and offensive, notwithstanding gastric lavage. Five days after operation enterostomy was done through left rectus incision. This drained freely at first but stopped, and stercoraceous vomiting continued. Six days after operation another enterostomy was done higher up through left rectus incision extended. Next day temperature went to 104 and pulse 120, but enterostomies drained freely, and he made a good recovery, although he had some wound trouble.

3.—Miss E. H. (34-389), aged 33 years, admitted to Stuart Circle Hospital with history of severe abdominal pain and vomiting which came on suddenly two days previously. Enema

had been ineffectual. Abdomen distended. Had been operated by me one month previously, and a large fibroid tumor resected from the uterus. Had suffered pain and nausea following the operation, but had been discharged in good condition, and remained so until taken with this present attack. I was of the opinion that the obstruction was due to a band at the seat of operation. A search was made for this, which was found and released, but the patient became eviscerated, necessitating considerable manipulation. Enterostomy was performed above seat of obstruction, but patient died same night. It was a mistake in this case to seek to relieve the obstruction. A simple enterostomy would, I believe, have been successful.

4.—Mr. C. G. (34-354), age 22 years, admitted to Stuart Circle Hospital September 19, 1929. Fat. Had been operated by me five months previously for a chronic appendicitis, but continued to suffer from obscure attacks of pain in abdomen and it was thought he had a binding adhesion. He was operated through right rectus under ethylene and the terminal ileum was found held down firmly in the iliac fossa by a Lane's band. This was divided and sutured transversely with apparent complete relief.

Following operation, patient continued to vomit and became distended, although low gravity apparently worked very well. Six days after operation wound opened by cutting through of stitches. Patient was very fat. Resuture was done under local anaesthesia, but patient continued to vomit and gastric lavage evacuated a large amount of stercoraceous matter from stomach. Enterostomy was done within twenty-four hours of repair of wound. Small intestines very much distended. No relief from vomiting, tube did not drain, colonic irrigations gave no result, and he was draining black fluid from stomach through a Juke's tube. At this point sinusoidal current was administered which stimulated intestines to action and enterostomy tube drained freely and bowels moved. He eventually made a slow but perfect recovery.

5.—Mr. G. B. (35-68), age 17 years, admitted to Stuart Circle Hospital February 20, 1930. Taken with a vomiting spell nine days before and developed an abscess of appendix which worked up from pelvis. Immediate operation through McBurney incision under ethylene anaesthesia. Appendix not removed, large abscess drained.

March 1st: Intestinal obstruction with usual symptoms. Median incision. Removed pelvic appendix and a concretion which had escaped. Obstruction caused by dense adhesion which was released. Enterostomy above point of obstruction. Recovered rapidly.

March 19th: Dissected out granulation tissue and sutured wound.

March 27th: Intestinal obstruction, enterostomy. Good drainage and soon began to pass gas and have normal stool.

April 16th: Discharged, recovered.

6.—E. D. (35-336), aged 5 years, admitted to Stuart Circle Hospital October 17, 1930. Taken day previous. Immediate operation for acute appendicitis with diffuse peritonitis. Appendix was removed and wound drained.

Two weeks after operation, when she was about to leave for home, was taken suddenly with abdominal pain and vomiting. Immediate enterostomy which drained freely. Was discharged wound healed and recovered fifteen days later.

7.—Mr. R. V. J. (36-159), aged 55 years, admitted to Stuart Circle Hospital May 24, 1931, with a history of severe abdominal pain and copious vomiting. Abdomen was distended but not hard and the greatest tenderness was in the right iliac region. He had taken salts and numerous enemata but had had no bowel movement. Diagnosis: Intestinal obstruction, probably due to adhesions.

Operation immediate, under spinal anaesthesia. Small intestine congested and distended with the terminal ileum collapsed. A small filament of adhesions was located which extended over the intestine and caused the obstruction. The coecum and appendix were densely adherent deep in the pelvis. The band of adhesions was divided with scissors and the adhesions of the coecum were released by finger dissection until the base of the appendix was exposed. In the process of removal the appendix broke and the tip was seized and removed also. The entire ileum then distended with gas, showing complete release of obstruction. Wound closed without drainage.

Comment: The patient had evidently had a severe appendicitis probably many years before. He had suffered from indigestion but presented no history of an acute attack of appendicitis. His present attack was evidently

inaugurated with an attack of appendicitis. Operative Diagnosis: Acute appendicitis on chronic. Intestinal obstruction. Following operation he was given five per cent glucose in normal saline by low gravity. The day following he began to vomit and this became continuous. Gastric lavage gave no relief. Glucose was given intravenously.

On the third day a left rectus enterostomy was done. There was a discharge of gas but no fecal matter. The enterostomy tube was irrigated hourly with four ounces of saline but there was only a slight discharge of fecal matter and the patient continued to vomit and the distention increased. A Juke's tube was passed into the stomach which drained with dark fluid of foul odor. Ox-gall enema was effectual but there was no improvement in the patient's condition and he became slightly delirious. As there was no result from the first enterostomy, another was done on the following day through a left rectus incision placed above the previous one. Instillation of salt solution was continued in both tubes and there was a slight drainage from both but it was not free and the patient did not appear to be relieved. Two days after the second enterostomy he was given five per cent hypertonic salt solution, one pint every hour, introduced through alternate enterostomy tubes. In this way four pints were given in three hours. Following the last instillation there was a large liquid stool of a brownish yellow color and following this a huge involuntary stool. Both enterostomy tubes began to drain freely and the patient's condition became more rational and improved. He was given some coffee and ice cream the same day that his bowels moved freely and his diet was gradually increased. Both enterostomy tubes were removed eight days after the first one was inserted. Discharged at the end of twenty days.

8.—Mrs. E. L. (36-214), aged 57 years, admitted to Stuart Circle Hospital July 12, 1931. Had been taken six days previously with epigastric pain and vomiting but this improved and patient was able to take some food, but four days after her initial attack she was taken worse and on the day following abdomen became hard and she began to vomit. Examination: Abdomen hard throughout, greatest tenderness in the right iliac. Diagnosis: Acute appendicitis, probably ruptured appendiceal abscess.

Operation immediate under spinal anaesthesia. Free pus in moderate amount was found immediately under the incision and welling up in the pelvis. There was a strong fecal odor. Pus was removed by suction. The appendix extended up behind the coecum and contained a concretion at the base. Beyond this was a gangrenous area of one inch and beyond this the appendix was distended with pus. The whole appendix was densely adherent throughout, and, in removing, it broke, discharging foul pus. However, the area was well protected with gauze sheets. Drainage was introduced and the wound closed. Following the operation the wound drained freely. Three days after a fecal fistula was established in the wound. A week after the operation she began to spit up and vomit brown fluid, but the next day her bowels moved freely. She continued, however, to suffer from nausea and occasional vomiting but would also have stools from enemata. Finally, on July 24th, twelve days after the operation, an enterostomy was done through the left rectus. This was irrigated freely with five per cent glucose and drained a very dark watery fluid rather profusely. However, she continued to vomit, although enemata gave good results. Three days after the enterostomy 300 c.c. of hypertonic salt solution was given intravenously and one pint of the same solution instilled into the enterostomy tube every hour until five pints were given. The patient then began to drain freely from the enterostomy tube and from the fecal fistula at the site of the original operation. The drainage consisted of liquid feces of a yellowish brown color and the abdomen became soft. Her bowels were kept open following this, when necessary, by enemata of one pint of the same hypertonic solution. The patient had now become delirious and refused nourishment, although her nausea was relieved and her bowels were moving completely and normally.

On August 4th, twenty-three days after her original operation, it was found to be impossible to force the patient to take food. A duodenal tube was introduced and through this she was given milk and hydrochloric acid and water. This was continued for twenty-one days, during which time the patient developed a definite pneumonia, which yielded to pneumococcus antigens. Notwithstanding this, she improved in flesh and gradually returned to

normal and was able to take general diet. Following this, she developed phlebitis in both legs alternately, which yielded to treatment by light. On September 19th her wound was repaired, and on October 3rd she was discharged from the hospital recovered.

Stuart Circle Hospital.

DISCUSSION

DR. I. A. BIGGER, *Richmond:* I enjoyed Dr. Robins' discussion of this interesting and important subject. The treatment of post-operative intestinal obstruction is important to every surgeon, because, no matter how careful we are, we will have such cases occasionally.

I believe we should consider the subject first from the standjoint of prophylaxis. It is important to keep infected abdominal cases on little or nothing by mouth until the abdomen begins to flatten out. At the Medical College of Virginia hospitals we are in the habit of ordering such cases nothing by mouth for the first twenty-four to forty-eight hours. We keep up their fluids, which, of course, is very important, by the administration of salt solution or glucose either intravenously or by hypodermoclysis. At the end of twenty-four hours, if the abdomen is not distended, we give small amounts of fluid by mouth. If it is distended, we limit the fluids by mouth until the distention begins to disappear. If it remains distended and the patient continues to vomit, we believe that surgical intervention is indicated.

The type of operation advised depends on the type of obstruction. When dealing with a mechanical obstruction, coming on during the first ten days, we advise an enterostomy. If the obstruction develops later and the patient's general condition is good, laparotomy with relief of the obstruction is the treatment of choice. The treatment in each case must be considered an individual problem.

Enterostomy should be done by a certain technique. We usually make an incision slightly above the level of the umbilicus, preferably on the left side. The operation is carried out under local anaesthesia. I do not believe it is wise to search for any particular segment of bowel, as, for instance, the upper portion of the jejunum. Even if it can be easily found, I am not sure it is wise to drain the upper jejunum for any considerable time, and the search for the jejunum adds to the operative trauma. If you go in, pick up the first distended loop of bowel, and insert a tube, using local anaesthesia, there is almost no shock, and I think the results are better We use the Witzel method, as there is less chance of subsequent leakage.

WARD WALK—DISCUSSION OF SOME CLINICAL PROBLEMS.*

MARSHALL J. PAYNE, M. D., Staunton, Va.

Hospital Record.—Y. E. R., white, female, widowed, age 49-50 years. First visit for present illness January 23, 1931.

Chief Complaint.—About January 10, 1931, noticed for the first time "a small amount of bloody discharge without leukorrhea from the vagina." Fatigued all the time. Patient requested "douche."

Family History.—Negative for cancer; positive for tuberculosis.

Past History.—Has had the usual diseases of childhood; no other serious illness. Menopause about three years ago without discomfort. General health has been good.

Marital History.—Has had one child, now 25 years old, one instrumental delivery, no tear of cervix, no repair operation, two miscarriages, and two operations for tubal pregnancies. At time of last operation, for tubal pregnancy, the appendix was removed.

Physical Examination.—Weight 130 lbs.—no lost weight. Healthy, normal looking woman, very intelligent, bright happy disposition. Heart and lungs normal. Blood examination R. B. C. 4,200,000. Haemoglobin 75 per cent. Wassermann negative. Pelvic examination made, same day, showed striking, unmistakable, advanced, hopeless malignancy of the cervix uteri.

February 2nd.—"Whole cervix badly involved and retracted." Biopsy, "squamous cell epithelioma type 2"—Broders.

Radium Treatment.—In all, three applications of radium were made. Following the last treatment a sharp hemorrhage took place, and a marked offensive characteristic odor developed. The process extended rapidly and is now widespread.

Progress Notes.—September 30th.—The condition appears hopeless. The pain is very severe, and the use of morphia for severe darting pains is demanded. The general condition is poor. Emaciation and rapid loss of strength is very noticeable.

The clinical problem presented by this case is: How could an earlier diagnosis have been made? What evidence did the intelligent patient see, to cause her to seek medical advice? The first and only symptom noted was a bloody vaginal discharge. The occurrence of a bloody discharge is a late sign in cancer of the uterus. How can the physician or surgeon make an early diagnosis, when the patient does not request an examination?

Paraphrasing one of the popular radio advertisement suggestions, we might have broadcast over the radio each night: "Be sure to have your uterus examined for cancer at least twice a year."

Granted, that by some means, all of our fe-

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male patients of the cancer age should come for an examination every six months in order that we may determine the existence or non-existence of uterine or cervical cancer, what symptom or sign, or group of symptoms or signs, will enable us to conclusively determine the presence or absence of malignant disease of the cervix or uterus in the early stage? And infinitely more important to the patient is not our ability to discover cancer in its early stage, but to discover the precancerous manifestations. What symptom, sign or condition, therefore, may we rely upon to enable us to diagnose the precancerous condition? Indeed, the diagnosis frequently is made so late that it is valueless to the patient. A diagnosis of malignant disease made after the appearance of the classical or conventional signs and symptoms is, usually, of no more practical value to the patient than a diagnosis made at the autopsy. One may well ask then: "What will enable us to make a diagnosis in the precancerous stage?" A better understanding of the nature and the cause of malignancy will enable us to correctly interpret the evidences of precancerous conditions. Very briefly I shall refer to some conventional descriptions of cervical and uterine cancer, and that you may know exactly what is taught in recent textbooks. I quote the following:

In Nelson's Loose Leaf Living Surgery, Vol. 7, page 179—"It is so unusual to encounter a woman with cervical cancer who has not been pregnant or has not been subjected to an operation involving the cervix, that in such cases the diagnosis is open to serious questioning until substantiated by biopsy." . . . "Truly 95 per cent of all women with cervical cancer have been pregnant." . . . "Careful history will show not more than 2 per cent of the cases developing cancer in previously untraumatized cervix." That refers to traumatism either by pregnancy or by instrumentation.

In the same reference, Vol. 7, page 191—"Leukorrhea is the first symptom of a new growth in the cervix, watery in character, odorless and slight in amount during the early stages." . . . "The diagnosis of cancer of the cervix is based on the history of the leukorrhea, palpation and the biopsy." . . . "The histological study is the court of last resort." . . . Although positive findings at the biopsy (the histological examination) is conclusive evidence, that the patient has cancer is necessarily a late diagnosis. The vital question is how much cancer has the patient got. Recurrence at once may occur.

I have read many treatises and listened to many dissertations on cancer, yet I have never known anyone to give any conclusive characteristic symptom, sign, or method for the determination of the certain diagnosis of malignancy in its early stage. Nor have I been able to learn from anyone some unfailing means which would unerringly enable *me* to clinically make the diagnosis of malignancy in the early stage. Let me urge a word of caution against the use of biopsy, without facilities for immediate examination of tissues and without facilities and plan for immediate, proper treatment.

Let us briefly discuss the cause of cancer. I quote from Practical Medicine Series 1930, General Surgery, Graham, at pages 451-2: "Examination showed in most slides the typical gastric ulcer. In one slide there were two acini that showed carcinoma." . . . "The logical conclusion is this microscopic area had recently arisen in the region of the ulcer as a result of the irritation." (Dr. J. S. Horsley.)

The truth is very near. Careful case histories show "98 per cent of all cases of cervical malignancy connected with the existence of a traumatized cervix, and in the remaining 2 per cent that the diagnosis is doubtful until shown by the microscopic examination." We may conclude then that trauma is a striking antecedent of cervical cancer, and "irritation" is likewise an antecedent in malignant disease of the stomach.

Did you ever stop to think that the effect of trauma, whether bacterical, chemical, thermic, physical, or mechanical is to excite tissue reaction-inflammation? And this conclusion logically and inevitably is forced upon us—that cancer may follow a succession of inflammations of the part affected. A chemical or ferment theory of the cause of cancer harmonizes with clinical and experimental findings.

Likewise, specific infections occur as antecedents of cancer. For example, in Acta Dermatologica, January, 1928, A. Tukai presents "a review of the rare type of cancer—primary carcinoma of the male urethra." Eighty cases are discussed. I quote exactly: "It appears to develop in most cases following chronic in-

flammation, the history showing a previous gonorrhoea in 60 per cent, and trauma in 12.7 per cent of cases reported. Few of the cases reported were early diagnosed and treated, hence a mortality of 71 per cent."

It is significant that chronic gonorrhoea and traumatism are found in case histories of 72.7 per cent of primary cancer of the urethra. I believe, therefore, that we must add an additional termination to inflammation. It has long been taught that inflammation may terminate in:

1. Return of the tissues to health; this return may be by delitescence (abrupt return);

2. By resolution;

3. By new growth (formation of fibroblasts, granulation tissue);

4. By death of the part, abscess, gangrene, etc., and

5. By death (somatic death).

And I now add to the foreging classic teaching:

6. *By malignancy* (M. J. Payne).

The conclusion that succession of inflammation may actually terminate in cancer serves to clear up and harmonize many conflicting theories about cancer. This conclusion, therefore, will enable one to a better understanding of the subject of cancer, and, in consequence, the means of early diagnosis and proper preventive treatment will be more fully appreciated and employed by the medical profession and the laity. The shocking revelation of the results obtained by the present day management of cancer cases conclusively demonstrates that the hope for the cancer victim lies in cancer prevention, and not in treatment of cancer. In a further paper, shortly to be offered, I shall more fully give my reasons for the above conclusion.

The challenge to the medical profession, by the very nature of the subject, is to teach the medical men and the laity that a persisting chronic inflammatory condition, irrespective of its location, is a potential cancer, and that, should the chronic inflammation fail to yield to proper remedial measures, it should be dealt with according to the most approved plan of treatment for cancer of the part affected. The diagnosis then of an unyielding chronic inflammation is a diagnosis of the true precancerous condition.

Summary and Conclusions

The term cancer used herein in the broad sense includes all malignant processes.

Cancer is a termination of inflammation. A succession of processes of inflammation occur, but not every chronic inflammation terminates in cancer. Likewise, not every inflammation terminates in abscess, gangrene, etc.

It is difficult, perhaps impossible, to make a constructive or differential diagnosis of cancer in the early stage.

A diagnosis of a chronic unyielding inflammation is a diagnosis of potential cancerous condition.

Cancer has a selective affinity for certain tissues and organs of the body, for example, cervix, uterus, stomach, breast, rectum, etc.

No one specific bacterial agent seems responsible for cancer development.

It is a significant fact that careful histories of 98 per cent of cases of cervical cancer reveal preceding trauma of pregnancy or instrumentation. The tranmatized cervix is exposed to the acid secretions of the vagina and to the presence of the streptococcus and other bacteria. Likewise, 72.7 per cent of eighty cases reviewed of cancer of the urethra gave a previous history of gonorrhoea and trauma of instrumentation, and it is noted in both cervical and urethral cancer that successions of inflammation occurred.

The five or ten year period of freedom from return of cancer, as an index of a cure, is misleading. Recently I saw a recurrence following a radical breast operation after twenty years of freedom. The ultimate mortality of cervical cancer is about 98 per cent. J. B. Murphy made the statement that not more than 2 per cent of cases of cervical cancer were cured.

The mortality of pan-hysterectomy in careful hands should not exceed 5 per cent. It would seem, therefore, that the logical treatment of the precancerous cervical condition is a pan-hysterectomy. The precancerous condition is chronic unyielding inflammation, always a potential cancer manifestation. We need to offer these cases true help, not a cold, lifeless stone.

Radium may be used and should be reserved for cases past the precancerous condition, or in actual cervical cancer. I confess that I have not seen a cure by use of radium.

Positive cancer biopsy findings, although conclusive evidence, is a late diagnosis, and

any claim for early recognition of cervical cancer is thereby precluded.

Biopsy does not tell how much cancer is in the patient's body. Biopsy can only prove that cancer is present in the tissue removed for examination.

Education of the profession and the public that cancer is a termination of inflammation and that cancer may be prevented by proper management will save many valuable lives.

A very recent confesssion by an intelligent widow of a physician indicates that the laity is more aware of the need for safe treatment in chronic inflammatory uterine conditions than the medical profession usually administers.

A prominent educator urged me to say that medical schools should teach graduates methods of thoroughness in examining patients, in order that a diagnosis of the cause of diseases may be made. The educator stated that many medical men simply apply some remedy for symptoms, without any regard for the diagnosis or the cause.

Hope for the lessening of the incidence of cancer lies in diagnosis of the precancerous manifestations and the application of appropriate treatment therefor. It is infinitely better to prevent than to have to treat cancer.

The profession needs to practice truth towards itself and frankness toward the patient.

REPAIR OF BILATERAL HARELIP.*

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Harelip may be defined as a congenital cleft of the upper lip, frequently extending into the nostril on one or both sides. It is simple when only the lip is involved and complicated when associated with a cleft of the alveolar process and the palate. It may be unilateral when the cleft is on one side, and bilateral when it is on both sides. Bilateral cleft is about one-fourth as frequent as unilateral, and left unilateral is a little more than twice as often found as the right. I will not go into a discussion of the unilateral harelip and cleft palate at this time, but will limit my remarks to bilateral harelip.

By observing the face of a six weeks old embryo, it will be seen that the mandibular process has already fused in the midline to form the lower jaw. The maxillary process on each side is separated by a groove from the median, which grows down from the fronto-nasal process. A fusion of these processes will form the upper lip, superior maxillae and the palate. Should there be a failure of fusion of the processes, a typical harelip and cleft palate will occur.

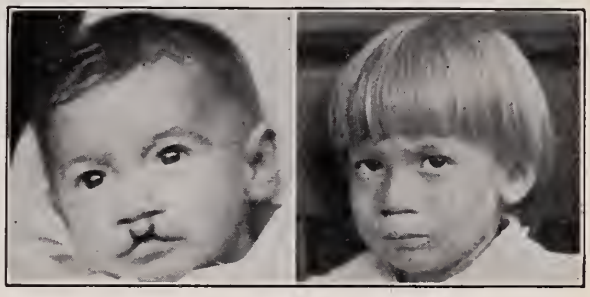

Fig. 1.—A.—Case of bilateral incomplete harelip—nine months of age.
B.—Postoperative result sixteen months after repair. Note the smooth lip-border, symmetrical nostrils and full, thick lip.

The cause of harelip and cleft palate is not known, but several theories have been offered. The tongue in the young embryo rests high against the fronto-nasal process, between the maxillary processes and, as growth occurs, the tongue descends, allowing the latter processes to come together. Should the tongue be prevented from descending, it will act as a mechanical factor in keeping the maxillary processes separated, and a facial cleft will be the result. There is some experimental proof in favor of improper foods on the part of the mother, retarding the development of the embryo as the cause of harelip. This is probably not as important a factor as the mechanical obstruction of the tongue. Heredity undoubtedly plays a part in some cases, but is too rare to be of great importance. It is estimated that heredity has a bearing on the etiology in from 10 to 20 per cent of the cases.

Bilateral harelip may be classified into several clinical types, as simple and complicated, or what is better, as complete and incomplete. When it is complete, the cleft extends all the way into the nostril, with usually a cleft of the alveolus and palate in addition. When it is incomplete, the cleft does not extend all the way into the nostril. A bilateral harelip case may be incomplete on both sides, complete on one side and incomplete on the other, or complete on both sides.

The deformity of a bilateral harelip is very

*Read at the sixty-second annual meeting of the Medical Society of Virginia, in Roanoke, October 6-8, 1931.

Fig. 2.—A.—Patient thirteen years of age; complete bilateral harelip.
B.—Shows the degree of protrusion of the premaxillary body, and the presence of a tooth on the process. It was necessary to resect the vomer and septum in this case to retrodisplace the premaxilla.
C. and D.—Postoperative fourteen days, showing symmetrical, rounded nostrils, a normal width of the lip and a natural fullness and protrusion of the lip.

striking. The cleft extends into both nostrils through the upper lip, alveolar process, and hard and soft palate. The premaxillary process projects much further forward than the lateral maxillary processes. It is not unusual to have the median process protruding one-half to one inch further forward than the lateral. This deformity not only gives the patient a very unsightly appearance, but makes the operation more difficult in older children. After the teeth have erupted the two central incisors present themselves on the alveolus of the premaxillary process. Sometimes four teeth are seen, but usually the lateral incisors are lost in the cleft. Another deformity noticed is that the philtrum is lost and the columella is too short. The alae nasi on both sides are flattened and flared out. In repairing a harelip it is most important to correct the nasal deformity in order to get a pleasing result. The best time for operation on a harelip is during the first few days or weeks after birth

Fig. 3.—A.—Case of bilateral harelip, complete on right, incomplete on left. Note the wide cleft on the right and the flattened and depressed ala nasi. The tip of the nose and nasal septum are deviated to the left.
B.—Eighteen days after operation, showing the nasal deformity to be corrected, the symmetrical nostrils and the median position of the nose.
C.—Shows the natural fullness of the lip in profile.

At this time the bones of the processes are soft and can be molded into position by thumb pressure, while the pull of the repaired lip will bring them closer together and obtain a more normal development. The effect of this will be to help close the palate cleft in front, and thus make it easier for the palate operation at a later date. The general condition of the patient is usually better immediately after birth

Fig. 4.—A. and B.—Girl eight years of age. Complete bilateral harelip with considerable protrusion of the premaxillary process, and two incisors growing from the alveolus. In the operative correction, it was necessary to resect the vomer and septum to place this protruding process back to proper position.
C. and D.—Results fourteen days after operation. The profile view shows that there is no backward displacement of the upper lip, which may result from allowing the premaxillary process to move too far backward when the vomer and septum are sectioned.

than a few months later without operation. These patients are susceptible to many respiratory infections because of breathing cold and unfiltered air through the wide open nose and mouth. They are unable to nurse and frequently suffer from loss of weight and impaired nutrition which may become very serious if not corrected. After the operation they should be able to nurse, and their general health should be better because of a normal nasal respiration.

Before the operation there should be a thorough physical examination, to exclude any acute infection, enlarged thymus or other pathological condition, which would make the operation more dangerous. The coagulation or bleeding time should be done, and corrected if prolonged, to lessen the chances of hemorrhage. The feeding should be regulated and supervised by a pediatrician to support the nutrition and prevent the loss of weight. Sometimes these babies are brought into the hospital in such a serious state of malnutrition and underweight that the operation has to be postponed for some time, in order to improve the general condition.

The anesthetic for the operation depends on the age of the patient and the choice of the surgeon. As a general rule ether is the safest general anesthetic for an infant or a young child. For older children, or adults, avertin and local, or local alone may be used satisfactorily. Blocking the infraorbital nerves on both sides will control the sensation of the lateral processes, and infiltration of the soft tissues of the septum back of the premaxilla will take care of the pain of the median process for the lip operation.

The protruding premaxillary process can frequently be pushed back by thumb pressure in the infant, and the molding of the repaired lip may be depended on to bring it still further back to its natural position. If the process is displaced extremely forward, or the septum and processes have become ossified, as in older children, it will be necessary to make a submucous section or resection of the vomer and nasal septum just back of the premaxillary process. This will allow the premaxillary process to be brought back to the proper alignment. The edges of the alveolar margin should be freshened and fixed into position until union occurs. Occasionally the repaired lip will hold it in its proper position, but it is usually bet-

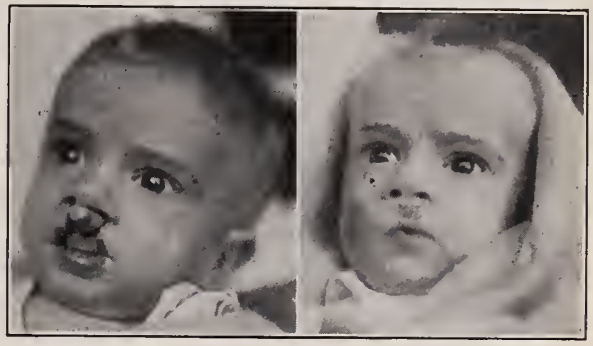

Fig. 5.—A.—Complete bilateral harelip, six months of age. B.—Fourteen days after operation.

ter to fix it to the lateral processes by silver wires. In older children fixation may be obtained by wiring the teeth of the median to those of the lateral processes.

Sometimes it is better to do the operation on the alveolar process at one stage and a week or ten days later repair the lip at a second stage. In most cases, however, especially in the younger patients where the bones are soft and the processes can be molded in position without much difficulty, the entire procedure may be done in one stage.

It is necessary to resect the attachment of the ala of the nose and adjacent part of the lip from the superior maxillae to a wide extent, to immobilize the soft tissues in reconstruction of the lip and reshaping of the nose. The premaxillary process should never be removed, but should be used in forming part of

Fig. 6.—A.—Incomplete bilateral harelip—four months of age. B.—Four years postoperative. The picture has probably been touched up by the photographer. It shows symmetrical nostrils and smooth lip-border.

the lip. The skin portion of this process should be trimmed to a quadrilateral or wedge-shaped structure. The lateral edge of this part should represent the length of the incision in the lip of the lateral process extending from the ala

along the muco-cutaneous line. This same outline is made on both sides so that when the raw surfaces are brought into apposition with that of the median process, the vermillion border will fall at the lower edge of the latter. The flaps of mucous membrane from the lateral processes are then adjusted to each other in a smooth outline to form the lip border beneath the premaxillary process. This plan does not force any skin from the lateral part below the median process which may make the lip too long. The operation may be modified to suit the individual case, but the principles should be the same; to conserve all the tissues possible, not to make the lip too long, and not to have a receding upper lip. It is better to suture the muscle and mucous membrane under the lip in separate layers in order to take the tension off of the skin sutures. The skin sutures can then be placed superficially and removed early to prevent scarring as much as possible. Horse-hair or fine dermal sutures are preferred for the skin and mucous membrane. Care should be given in forming the nostrils, to see that they are of normal and equal size on the two sides. As a rule, no dressing is applied to the lip, and the wound is left open after the suture line is dusted with sterile boric acid powder. It is advisable to make judicious use of specially cut adhesive strips to relieve the tension on the suture line. It is best not to apply these strips directly across the suture line.

Fig. 7.—A.—Complete bilateral harelip.
B.—Result fifteen months after operation.

In the post-operative care of these patients it is important to tie the hands down, or put cuffs on the arms at the elbows to keep the hands away from the lip. The lip is cleansed whenever necessary with equal parts of sterile boric acid solution and alcohol, followed by the dusting of sterile boric acid powder on the lip. The sutures are removed in from five to seven days. The feeding is given with an infant feeder or medicine dropper. The patient is not allowed to nurse the nipple for about two weeks after the operation.

The patient should be returned at a later date for repair of the cleft palate and a check-up on the results of the harelip operation. In some of these cases the cleft is too wide to get the best results from the primary repair, and some finer adjustment of the lip or nose may be made at the time of the cleft palate operation.

NOTE: Cases in Figures 6 and 7 were operated upon by Dr. C. C. Coleman.

Professional Building.

THE INTRA-MUSCULAR INJECTION OF LIVER EXTRACT IN CASES OF PERNICIOUS ANAEMIA.*

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Pernicious anaemia up until a comparatively recent date was considered invariably a fatal disease but has been controlled almost entirely, as you know, by the use of liver. The ingestion of liver in its numerous methods of preparation has been the cause of saving many lives of those who would cooperate with this therapeutic measure.

Unfortunately the ingestion of liver has had two drawbacks which were very pronounced. 1. The eating of liver over a long period of time became so abhorrent to many individuals that the very mention of the name would cause nausea. These individuals naturally became rebellious and consequently constant remissions occurred. 2. The manufactured preparations, in which there was liver concentrate, were prohibitive in their price as only the well-to-do could afford to spend about $8.00 a week for the manufactured preparations. Even the eating of liver was an expensive proposition, for to get the best results an individual had to consume at least one-half pound a day and, with calves' liver at 90 cents a pound, many persons had to die of anaemia.

Two years ago I instituted what I think was about as cheap a method as possible, and that was having the individual make his own aqueous extract. This was done by utilizing either hog or beef liver, at the market price

*Read before the Medical Society of the District of Columbia.

which was about 25 cents a pound, over 90 cents a pound for the calves' liver. I had the patient chop the liver in small pieces, put it into a container, add a pint of water and allow to simmer for at least an hour, keeping the water to a pint, as is done in making the old time beef tea. These patients could take this aqueous extract in three or four ounces at a time, several times a day, disguising the taste with lemon or orange juice and, drinking it in small quantities, frequently they could gulp it down in such a manner that they did not seem to object to it. Of course I do not know that this aqueous extract would be entirely beneficial as a primary treatment in a severe case of pernicious anaemia but I have used it with a good deal of success with those who have had a blood transfusion to tide them over.

It was only natural to suppose that as time went on the investigators, who have been working so faithfully and untiringly on this subject, would arrive at some method of administering liver which would not only be less expensive but could be given either intramuscularly or intravenously.

It remained for Cohn and West to devote their time to finding an active principle in breaking the liver structure in what they termed fractions. Their fraction G seemed to be of particular importance and could be administered intravenously without causing reaction to any great degree, other than lowering the blood pressure. This did not seem to be a very alarming symptom when used primarily on animals, and then on human beings.

The first published paper on the intravenous use of concentrated extracts of liver was published by Castle and Taylor in the *Journal of the American Medical Association*, April 11, 1931. It is believed though that Murphy of the Peter Bent Brigham Hospital had done work along this line prior to the publication of the aforesaid paper. I would refer you to this most excellent article as it goes into detail in a most scientific manner. Dr. Murphy, of the Peter Bent Brigham Hospital, I believe has the credit of using the first intra-muscular injection of liver in this country in cases of pernicious anaemia. He instituted this treatment in May, 1931, about the same time that Dr. Joseph E. Connery, of the Third Medical Division of Bellevue Hospital did.

Having under my observation in my service at Providence Hospital several cases of pernicious anaemia at the same time, I decided to use the intra-muscular injection of the solution of liver extract. I communicated with one of the drug manufacturing concerns who kindly sent me, gratis, sufficient amount of their product to treat the patients that I had under observation. I ordered this at my own expense but when they found out it was for hospital patients they insisted on supplying me with the preparation. The results in my three cases were so astounding that I am reporting them in hopes that others will institute the treatment at once and I would appreciate very much if those who are kind enough to follow out the suggestion will let me know their results, as this is only a preliminary report.

The solution is an aqueous concentrate coming in ampules containing 5 c.c. of material from 100 grams of liver. An ampule is given each day in the gluteal regions for four or five days, after which, according to the response of the individual, the time of administration may be lengthened to one a week or even longer.

We examined the blood the day following these administrations and found wonderful improvement each time. These ampules cost, at the present time, $3.50 for three ampules. Hospitals, I presume, could get it at a more reasonable figure and there is no question that in time, when it becomes more extensively used, the cost will drop in proportion. Even now if the patient takes the first four at less than $1.00 apiece and after that a week or more apart, it is less expensive than the present method of extract and ingestion of liver. I believe that the dose of 5 c.c. should be divided as the full contents of one ampule caused considerable pain in one individual.

I am only abstracting in the following cases and not giving complete histories.

Case No. 1.—Mr. S—, adult, male. Brought to the hospital December 8, 1931. He was in such bad condition that he was brought in on a stretcher and looked desperately ill. Had an anxious expression and looked like he was exsanguinated. Complained of intense weakness, inability to walk, tingling sensation in fingers and toes. Marked dyspnea; palpitation of the heart; gradual loss of weight; diarrhea; itching of the skin; soreness of the tongue. Pearly

sclera, pale conjunctiva. Tentative diagnosis: Grave anemia.

Physical examination at this time does not show any cause for his general anemic appearance. Haemogram ordered and reported December 9, 1931, shows a red cell count of 830,000 per cu. mm., his hemoglobin was 18 per cent, leucocytes 4,800. The blood picture shows anisocytosis, many microcytes and macrocytes together with poikilocytes and some polychromatophilia and an occasional nucleated red blood cell.

This patient was of the rebellious type and had taken liver by mouth over a period of such a long time that he said he came there to die and said he had rather die than take any more liver. The sight of it made him so sick that he could not stand it. We gave him a transfusion because at this time we had not received the liver extract that we had ordered. His red cell count increased to 1,640,000 and the hemoglobin to 30 per cent. The reticulocytes at this time were 1.2 per cent. His blood picture remained at this level until December 19th, at which time the intramuscular use of liver was initiated. The next day the hemoglobin was 32 per cent, the red cell count 1,830,000, the reticulocytes were 5 per cent. December 23rd, hemoglobin 33 per cent, red cell count 1,920,000, volume index 1.3. The fragility test showed beginning hemolysis 40 per cent, complete hemolysis 24 to 28 per cent.

There was gradual daily increase in this patient up until January 12th, at which time he was discharged from the hospital. His blood picture showed 65 per cent hemoglobin with 3,800,000 red cells. He states that he feels better than he has in many years. He walks with agility and his cerebration is unusually active. He now comes to the dispensary once a week for his hypodermic injection.

Case No. 2.—Mrs. W—, white, female, age 54, admitted to the hospital December 12, 1931. Complains of intense weakness, tingling and numbness of the extremities. Marked dyspnea; wobbling gait. This patient is well nourished, has anxious expression, waxy looking skin, pearly sclera and very very pale conjunctiva. The tongue and throat quite sore and very glazed looking in appearance. She has no appetite and complains of vomiting and diarrhea at times. Tentative diagnosis: Severe anemia.

Physical examination does not show any cause for her anemia. This patient had been in the hospital on three different occasions. While she had cooperated to the best of her ability she had reached the stage where she could no longer take liver by mouth. Haemogram shows a hemoglobin of 15 per cent, red cell count 890,000. This patient was in such bad shape that a transfusion was given to tide her over. As a result of this transfusion the hemoglobin was 30 per cent and red cell count 1,630,000. She remained at this level until December 22nd at which time liver extract intra-muscularly was instituted. On the 23rd her hemoglobin had increased to 34 per cent, her red cell count remained the same but her reticulocytes rose from 1 to 3 per cent. The liver extract was given to her daily for five doses at the end of which time her hemoglobin was 65 per cent and the red cells were 3,270,000. Her appetite increased rapidly. She walked around the wards with great comfort and claims to have felt better than she had for years. She was discharged from the hospital January 5, 1932, but she was told to come back to the dispensary once a week for treatment. The last count, February 16th, the hemoglobin was 80 per cent and her red cell count was 4,000,000.

Case No. 3.—Mrs. B—, age 50, admitted to the hospital October 15, 1931. This is a well nourished woman, with anxious expression, marked dyspnea. Skin has a glazed and lemon tinted appearance. The sclera is pearly gray in appearance. The tongue is smooth and very sore. She complains of intense weakness, pains in the limbs. She has recurrent attacks of diarrhea. The tentative diagnosis in this case: Grave anemia.

Physical examination does not disclose any cause for this anemic condition. Haemogram—October 16th—shows hemoglobin 24 per cent, red blood cells 1,000,000 and the rest of the picture characteristic of pernicious anemia.

This patient was used as a control case, having administered to her the aqueous extract of liver by mouth as above described by me. She was getting an extract equivalent to one-half pound of beef liver a day. On October 24th her hemoglobin was 30 per cent, red cells 1,320,000, reticulocyte count was 5 per cent. This treatment was continued until October 30th at which time her hemoglobin was 58 per

cent, red cells 2,610,000. On November 3rd, the patient was placed on ventriculin, 20 c.c.. three times a day. As the patient commenced to show signs of remission we discontinued the ventriculin and instituted the liver extract solution by mouth. On November 28, 1931, her hemoglobin was 65 per cent, red cells 3,090,000. She continued to improve until time for discharge, at which time her hemoglobin was 66 per cent, red cells 3,350,000. This woman lived in the country and we have not been able to follow up this case, although we told her how to make her aqueous extract and asked her to get in touch with us in the near future. She was discharged from the hospital, December 25, 1931.

Case No. 4.—This case is interesting because she has cooperated in every way for the past five years, having come under my observation the first time March 23, 1927. This woman, like all other such cases, would have remissions due to the fact that she would reach the stage where she could not possibly eat liver in any form and the manufactured extract was too expensive. She has had numerous transfusions and would be benefited for a while. In March, 1929, I suggested her using the aqueous solution as described in my opening remarks. This aqueous extract she seemed to be able to take without causing her much revulsion of feeling. She could take the equivalent of nearly one-half pound a day, disguised in different ways, and she did not seem to mind, as she claimed, gulping it down. During the last mouth, she went on a strike and would not take the liver any longer.

When she came under my observation in 1927 her hemoglobin was 43 per cent, red cell count 1,990,000, and the complete picture of pernicious anemia. With her honest cooperation she reached levels varying as high as 80 per cent hemoglobin and 3,270,000 red cells on the aqueous solution of liver extract. February 29th, of this year, she commenced to complain of palpitation, dizziness and intense weakness. Her hemoglobin was 68 per cent, red cell count 2,390,000. She has, so far, received four injections of the liver extract and on March 3rd her hemoglobin was 75 per cent and her red cell count was 3,680,000. Her dizziness and weakness have practically left her and she feels very much improved.

Case No. 5.—Miss S—, college student, age 19. Complains of loss of appetite, tires easily, gastric disturbances, dizzy spells. Sclera pearly, conjunctiva very pale, tongue raw looking. Diagnosis: Marked anemia.

Blood examination, February 10, 1932. Red cells 2,300,000, Hg. 40 per cent, and rest of picture that of pernicious anemia.

Liver extract was administered in gluteal region, 5 c.c., February 18th, second injection February 20th; day after second injection the Hg. 60 per cent, red cells, 3,400,000. Third injection February 23rd; next day Hg. 80 per cent, red cells 3,800,000. Fourth injection February 29th; next day Hg. 85 per cent, red cells, 4,300,000.

I have not seen this patient since that date but understand that she has improved in every way.

In conclusion I would state that from my limited observation on the use of liver extract intra-muscularly I feel that it will be of inestimable value.

Case No. 1 and Case No. 2 would have to have been seen to realize the seriousness of their condition. They were both of the rebellious type as to the ingestion of liver in any form; they could not afford transfusions and would unquestionably have died had we not had the intra-muscular method of administration of the liver to use in their cases. At the present time they are enjoying most excellent health.

Another advantage, as stated above, is that the liver can be used by hypodermic at times to tide them over when they reach the stage when they can no longer take it by mouth. I feel that the solution of liver extract as suggested by me and described above is of value on account of its being so inexpensive.

The textbook states that all cases of pernicious anemia are, as a rule, in an advanced state when they come under observation. This is certainly a commentary on the medical profession. Why these individuals should reach such a condition before diagnosis I cannot understand. In my office hemoglobin and red cell examination is routine, as I have found by long experience that anemia in some form. is almost invariably present, and I feel if this simple blood examination were made during the course of the physical examination that many cases of pernicious anemia would be picked up long before they reached this seri-

ous condition. Particularly in view of the fact that the other symptoms are so pronounced and should not be overlooked.

What influence liver has on secondary anemia I am not in a position to say yet but I have several patients at the present time with marked secondary anemia who seem to be improving rapidly on the use of the aqueous extract as suggested by me with no other treatment so I feel there must be some beneficial factor.

REFERENCE

Intravenous Use of Extract of Liver. Castle & Taylor, *J. A. M. A.*, April 11, 1931. Lederle Laboratories.

Farragut Apartments.

TRAUMA OF THE ABDOMEN.*

F. S. JOHNS, M. D., Richmond, Va.

Injuries of the abdomen may be classified for convenience as penetrating and non-penetrating. With our increased taxation and improved highway system, non-penetrating injuries of the abdomen as the result of automobile accidents alone, must attract serious thought. In the limited time allotted me, I shall confine the scope of this paper to injuries caused by non-penetrating forces.

Unlike more obvious stab and gun-shot wounds, trauma resulting from blunt forces is usually difficult to diagnose. Injuries showing the least damage to the abdominal wall are generally the most serious, for which the most plausible explanation assumes that if the abdominal muscles are rigid when struck, they catch and break the bulk of the blow preventing great damage beyond. If, however, the abdominal wall is relaxed at the moment of impact the content of the abdomen must reap the maximum harm.

It is interesting, on this point, to note that the stomach and colon are seldom injured, although each holds a fairly superficial location. But they are also both well guarded. Each one is thick walled. The stomach is protected by the lower chest wall and the colon has the benefit of cushioning by the small intestines. Rupture of the duodenum is rare, unless it is diseased. If rupture occurs from injuries, it is usually in the third part where it crosses the vertebra. Traumatic rupture of the normal duodenum is practically always fatal.

Injuries to the small intestine are more common, owing to their ready exposure, the thinness of the wall and to its relation to the vertebral column. Here, an early diagnosis is important. Certain points may be emphasized as helpful in making these diagnoses whose promptness is imperative. The following case is an illustration from my experience with this type of abdominal trauma:

Case 1.—A child, nine years old, was knocked down on his back by a Ford, which ran over his abdomen. The boy, whom I saw immediately, was found with no marks or bruises on his abdomen. He was shocked. His abdomen was rigid and he complained of pain. Pulse was of small volume and fast. Catheterized urine was negative for blood. X-ray of pelvis and spine was negative. His abdomen was opened immediately and a perforation one inch long of the small intestine was repaired. The abdomen was irrigated and closed without drainage. He made an uneventful recovery.

Case 2.—A man was struck in the lower abdomen by a small piece of timber projected by a circular saw. He was unconscious for a few minutes. On recovering himself his pain was intense. He vomited three times and was taken home and visited by the family physician, who advised him to come immediately to the hospital. He was given ¼ gr. morphine, but the pain continued. He was seen again three hours later by the doctor, who gave him another ¼ gr. morphine. Seven hours after his injury he was sent to the hospital. I saw this patient promptly when he reached the hospital and found no external evidence of injury to the abdomen. He was still suffering intense pain. His abdomen was rigid: pulse 120, temperature 101.2, respiration 24, with an increased leucocyte count (15,000). There was no blood in his urine. The family physician stated that the patient's pulse and temperature were normal when he was first seen. He was operated on at once, through a low left rectus incision. Fecal material was found throughout the abdomen with hemorrhage. The small intestine was cut entirely in half into the mesentery. The laceration was repaired; the abdominal cavity irrigated and closed with drainage. The patient died in thirty hours.

These two cases stress several important facts. Abdominal rigidity, pain, and gradual increase of pulse-rate with change of volume

*Read before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, October 6-8, 1931.

are the danger signs of abdominal trauma, following non-penetrating injuries.

Rupture of the bladder carries a high mortality. Such injuries are divided into the two classes, extra-peritoneal and intra-peritoneal. Cases of intra-peritoneal injuries are usually accompanied by peritonitis; while extra-peritoneal rupture is followed by cellulitis. Bladder injuries occur more frequently in men, due to their greater risks and to the lesser protection to the bladder in the male. Disease of the bladder and the degree of distention is important in rupture of this organ. It is questionable whether a blow over the bladder would cause a rupture if the bladder were empty. This would not be true of fracture of the pelvis. Urgent desire to micturate and the passing of only a few drops of bloody urine is a most important point in early diagnosis.

Case 3.—A woman, aged thirty-six, was admitted to the City Hospital one hour after an automobile accident.

On admission the patient was conscious, but in profound shock. Examination showed that she had a compound comminuted fracture of the left arm with no other abrasions or bruises. She complained of severe pain through the lower abdomen. The pain was exaggerated on movement of her legs.

Catheterized specimen showed a small amount of blood in the urine. Cleansing and partial debridement of the left arm was done. A Thomas splint was applied. The patient was treated for shock. Six hours after admission X-ray pictures of the pelvis were taken which showed a compound comminuted fracture of the ascending and transverse ramii on the left side. There was slight rigidity in lower abdomen. The patient's bladder was irrigated with boric acid and showed the same amount returned through the catheter as injected.

The patient's temperature the first few days varied from 99 to 100. Fourth day after accident she was taken to the plaster room and a double plaster spica splint was applied. The sixth day her temperature was elevated and she complained of painful urination. Temperature 102 in the afternoon. Urinalysis showed a great many pus cells. A urologist was called, who made a diagnosis of cystitis. The patient continued to have pain from bladder tenesmus and pain on urination. Temperature remained elevated. On the seventh day patient complained of considerable pain and tenderness in left iliac fossa. Cast was removed. Ninth day leucocyte count was 19,000. Temperature 103. Pulse fast.

We saw this patient in consultation nine days after the accident and found a mass in the left iliac fossa, for which we advised incision and drainage. At operation a large abscess was drained, resulting from injury to the bladder and extravasation in urine. Patient continued to get worse and died forty-eight hours later.

Ruptures of solid organs are usually classified as capsular and subcapsular. Injuries to the spleen are not uncommon and with prompt diagnosis the results are generally good. The following is a typical illustration of the successful repair of such an injury:

Case 4.—A middle-aged man was driving a "T" model open Ford to Richmond, when he met a neighbor at a sandy spot in the road. In attempting to slow down he stepped on the brakes too hard. The Ford cut out of the road to the left, throwing the driver over the left front door. He was struck just below the lower border of his ribs on the left side. He was brought to the hospital about two hours after the accident in a state of shock; pulse fast and of small volume. He complained of pain in the region of the injury and in the left shoulder. His abdomen was rigid; leucocytes were high, as usual in cases of hemorrhage. A diagnosis of injury to the spleen was made and upon operation the abdomen was found filled with blood. The spleen was severely torn. A splenectomy was done and the patient's recovery was complete.

The liver is frequently injured. Its location, its fixation and inelasticity are responsible for this. The usual case of injury to the liver is readily repaired by mattress sutures or packing.

Injuries to the kidneys are usually incurred when the body is crushed. If the damage is severe, hemorrhage will be profuse and shock is profound. Hematuria is usually present in kidney injuries, although it should be borne in mind that it is not a necessary finding. An interesting fact about kidney injuries is that emergency operative surgery is rarely called for. Occasionally a nephrectomy may be indicated.

Considering the emergency demands of certain intra-abdominal injuries, it is of first im-

portance to realize that the classical signs and symptoms of trauma are too frequently absent. One must not be misled by laboratory findings. Clinical experience and sound judgment are at a premium for the right handling of intra-abdominal trauma.

Abdominal rigidity is one of our most reliable signs of intra-peritoneal damage. It may be local or diffuse. If the injury is severe, it usually increases; while if the trauma involves only the abdominal wall, the rigidity gradually subsides.

A second trustworthy sign is the state of the pulse. At first, the rate may not be changed, as was shown in Case 2, reported above. If the damage is serious, the tension is always low, the pulse gradually increasing in rate. If hemorrhage is a complication, the pulse tension remains low. When there is no hemorrhage, the pulse improves after the primary shock is over. Pain has been another constant symptom in my cases of serious injury. Of course, we may have slight injuries to solid viscera with little pain. But if the injury is important, pain is always present. Change in respiration, abdominal distention and percussion of the abdomen may or may not be valuable.

On presenting such a subject of universal interest and menace, I wish to emphasize the summary of my conclusions. To the general practitioner: Abdominal rigidity, pain and continued increase of pulse rate are three urgent signals, following non-penetrating blows to the abdomen. To the surgeon: We must not rely too strongly on the house-physician. These cases are serious and it is of utmost importance to the ultimate outcome that they be seen promptly by a surgeon of experience and judgment.

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DISCUSSION

DR. M. A. JOHNSON, JR., *Roanoke:* I have enjoyed hearing this paper on Trauma of the Abdomen. It is short and to the point. A few years ago a paper such as this, dealing only with injuries to the abdomen by some blunt object, would have been a little out of the way, but today it is a live issue. In this discussion emphasis of the points that have been brought out is well worth while.

Early diagnosis is necessary if one expects a patient to recover. Abdominal rigidity has always been one of our guiding signs in intra-abdominal trouble, whether there is disease or trauma. A quickening pulse with abdominal rigidity is almost pathognomonic. A point which may be misleading is observed in cases with a picture such as Dr. Johns has presented, when under treatment for shock, by morphine, fluids intravenously, or blood transfusions, and heat, the patient improves temporarily, then one or two hours later becomes worse. It is not wise to allow this short period of improvement to persuade us to postpone operation until the second depression occurs, when the percentage of recoveries will be less.

I should like to cite just one case similar in many respects to one Dr. Johns has mentioned. Mr. W. A. S. was brought to the hospital one morning about ten o'clock. The patient was in shock, very tender over the abdomen, and complaining of severe pain in the abdomen. He was given morphine, put to bed and other treatment for shock instituted. Intra-abdominal injury was suspected immediately. This patient was watched closely. He apparently came out of shock, but not quite back to normal; then relapsed into a further state of shock with abdominal rigidity, and quickening of pulse. This patient's abdomen was opened six hours after his admission to the hospital and three holes in the small intestine were found. These were repaired and the patient convalesced without incident. This patient had just the points that have been brought out, abdominal rigidity, pain, shock, and then increasingly weakening pulse. The misleading thing about this case was that he was struck in the abdomen with a board which flew from a piece of machinery and there were no marks whatsoever on his abdomen. However, when incision was made for operation it was found that his right rectus was macerated, in addition to holes in the abdomen.

In closing this discussion I should like to reiterate the points which Dr. Johns has brought out, abdominal rigidity, pain and increase of pulse rate. These are three landmarks of intra-abdominal injury which cannot be overlooked and when these signs are found, conservatism means immediate operation, and even if these signs are not pronounced it is better to be brave, although mistaken, and the rationale of non-operative treatment is questionable.

EARLY DIAGNOSIS OF TUBERCULOSIS IN CHILDREN AND YOUNG ADULTS.*

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Although the mortality rate in general from tuberculosis has been cut in half in the last twenty-five years, this disease is still exacting a great toll of lives yearly. In fact, the mortality rate among young adults is still very high in spite of the fact that consumption was one of the first diseases known to man.

Since the discovery of the tubercle bacillus in 1882 by Koch, an enormous amount of research and clinical work has been done, and volumes written on tuberculosis. Yet, today we have no specific cure in the form of medicines as in the case of malaria, syphilis, and other diseases.

Today, as in the days of Trudeau, the only hope for cure lies in the early diagnosis and

*Read at the sixty-second annual meeting of the Medical Society of Virginia, in Roanoke, October 6-8, 1831.

treatment with rest, wholesome food, fresh air, and sunshine.

The follow-up work over a period of years (1909† to 1922) at Catawba Sanatorium by Nicholls shows that of the patients discharged during this period, 90 per cent of the minimal cases were still living as compared to 67 per cent of the moderately advanced and 33 per cent of the far-advanced. The majority of the minimal cases were making their own living whereas the moderately and far-advanced cases were to a large extent invalids. Yet, sanatoria all over the country are overloaded with far-advanced cases, chiefly on account of delayed diagnosis.

Diagnosis, from the earliest days, has been based chiefly on symptoms. Before the days of auscultation, bacteriology, and X-ray, symptoms and general appearance were the only means of diagnosis. But the symptoms in early cases of tuberculosis are frequently overlooked until the disease has reached the moderately advanced or far-advanced stage. This led to a general feeling of hopelessness in the treatment of tuberculosis and discouraged patients suspicious of tuberculosis from seeking a diagnosis of their disease. Too frequently, the physician has been reluctant about making the diagnosis on this account.

With the perfection of the stethoscope by Laennec, the development of more refined methods of physical examination of the chest was possible; and inspection, percussion, and auscultation in skilled hands become more accurate and valuable in diagnosis. But, the discovery of the tubercle bacillus was the greatest contribution to the diagnosis, treatment, and control of tuberculosis. Yet, however valuable the microscope, it is not a sure fire diagnostician, for often sputum is negative for tubercle bacilli until the advanced stage of the disease is reached.

The use of the X-ray in diagnosis of lung conditions, and especially the development which admits of stereoscopic views of the plates, has proven one of the most important factors in the early diagnosis of tuberculosis. Since the discovery and application of the tuberculin scratch test by Von Pirquet, this has proven very useful in determining the presence of previous infection with tubercle bacilli. However, the intradermal test developed by Montaux is generally considered more sensitive.

†Catawba was opened in 1909.

Notwithstanding all these adjuncts to accurate diagnosis, more or less independently developed and in large measure independently used, it has been most difficult until a comparatively recent period to diagnose tuberculosis in early stages in children and young adults. This has been especially true in regard to diagnosis of tuberculosis in negroes. The proper and orderly application, however, of each of the aids to diagnosis above mentioned will undoubtedly result in the early diagnosis of these cases. This has been clearly demonstrated by the work of Rathburn, Opie, McPhedran, Chadwick, Myers, and others.

For a considerable period of years, we have been conducting tuberculosis clinics in Virginia, depending for diagnosis chiefly on the history and physical findings. The X-ray was used when accessible and series of sputum examinations when obtainable. We have by these methods and by our follow-up work been able to get a large number of tuberculosis cases under some kind of supervision. This has been quite satisfactory for adults but, on account of the inaccuracy of the diagnosis in children, we felt it necessary to seek a more accurate and satisfactory service for them.

The State Tuberculosis Out-Patient Service, therefore, has adopted the method that is used at Phipps Institute in Philadelphia. This is the family study method. There must always be a source of infection, and this is practically always one or more members of the household of the patient during childhood. It is necessary by this method to take each member of the household into consideration in the search for the danger spots.

It is the height of folly to send a child to a preventorium for from three months to a year or more and thereafter return him to the same home and to the same careless contacts that were responsible for the condition that called for his removal to better surroundings. It is far more profitable to send the cases in the home among older people to the sanatorium for instruction and then induce sanitary methods in the home to prevent further infection of the children. For it is realized (as will be shown by illustrations) that the child with tracheobronchial or small amount of parenchymal pathology will usually handle it well if there is no exogenous infection.

In our clinics we act on the knowledge that it is the contact group of children that will

compose most of the future patients, so these are given the intradermal tuberculin test. They are given .01 mg. of Koch's Old Tuberculin diluted with sterile normal saline solution to make a volume of .1 c c. as the first dose. The flexor surface of the right forearm is used for this. If there is no reaction in forty-eight hours, the same volume of solution but containing 1 mg. of tuberculin is used on the left arm in the same manner. Fresh solutions must be made each day on account of the danger of contamination over a period of time. The reaction is read in terms of edema and redness, and classified as one, two, three, or four plus, depending upon the amount of edema. If any sloughing occurs, it is four plus. If there is redness and no edema, it is classi ed as questionable and repeated in the opposite arm with the same dose. It is best to us .01 mg. as the first dose, as there is danger of sloughing in an unusually sensitive individual. This is especially true in the negro.

If there is fever, skin eruption, or recent vaccination, the test in contraindicated for in such case there may be interference with a true reaction. The test is also contraindicated in pregnancy after three months.

All the reactors are X-rayed and the plates interpreted by the clinician. These are classified as tracheobronchial or parenchymal, both of which may be active or latent. A physical examination, consisting of general inspection of the body; and palpation, percussion, and auscultation of the chest for signs of pulmonary or cardiac pathology, is made.

The table shows the analysis of 1,251 cases,

TABLE I

Analysis of 1251 Cases Showing Reaction to Tuberculin and X-ray Findings of Reactors with Reference to Contact History.

History of Contact		Examinations		Reaction to Tuberculin						X-ray Findings						Negative X-ray and Tuberculin Reaction	
				Positive		Negative		Parenchymal Lesions		Tracheobronchial Lesions		Suspicious		Negative			
		W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C
	No.	768	250	471	153	297	97	27	14	202	74	74	25	154	36	451	133
Known	%	79.4	88	61.2	60.1	38.5	38.8	3.1	5.6	26.3	29.6	9.6	10.0	20.2	14.4	58.7	53.2
	No.	76	21	30	4	46	17	0	0	15	1	3	0	13	3	59	20
Questionable	%	7.8	7.39	40	20	60.5	80.9	0	0	19.7	5	4.0	0	17.1	14.3	77.6	95.2
	No.	123	13	43	4	80	9	0	1	15	2	12	2	23	3	103	12
Negative	%	12.7	4.57	35	30.7	65	69.2	0	7.7	12.1	15.3	9.6	15.3	18.5	23.1	83.5	92.3
	No.	967	284	544	161	423	123	27	15	232	77	89	27	190	42	613	165
Totals	%	77.2	22.8	56.2	56.7	43.7	43.3	2.8	5.3	24.1	27.1	9.3	9.5	19.6	14.7	63.4	58.1

4.4% of reactors were not X-rayed.

TABLE II

Physical Findings in Relation to Disease

Abnormal Physical Findings		Parenchymal		Tracheobronchial		Suspicious		Negative	
		W	C	W	C	W	C	W	C
Imp. Reson.	No.	12	5	134	57	57	15	264	101
Breath Changes or Rales	%	25.0	50.0	11.2	8.8	17.6	6.6	13.0	8.0

from six months to eighteen years of age, that were given the tuberculin tests. A much larger number of whites were examined on account of the difference in population and reluctance on the part of the colored to take advantage of the opportunity. There is no appreciable difference in the percentage of reactors and disease in the two races.

The percentage of reactors and disease is twice as great in the known contact group as in the questionable or negative contact group. This is not as great as would naturally be expected, but can be explained by the fact that we were forced to depend on the history as given by the patient without investigation in a large number of cases. A group in one community, where investigation was made, showed 80, 40, and 20 per cent reactors respectively in the known, questionable, and negative contact groups.

The X-ray revealed the presence of disease in 47.6 per cent of the reactors in the whites and 50.9 per cent in the colored. Of this group only a very small percentage was considered active.

In the follow-up work a small number were X-rayed again, about six months later, and none of these has shown any progressive changes, while a few have shown retrogression. An attempt was made in all cases to control or separate the contacts. While this group is too small to draw definite conclusions, it does indicate that the disease progresses very slowly in children. This is borne out by the fact that the lowest tuberculosis mortality age of man is between two and ten years of age. We were unable to X-ray a small group of the reactors (2.4 per cent) as they were too small.

The tabulation of abnormal physical findings shows a larger percentage in the cases showing parenchymal lesions than those with tracheobronchial ones, yet less than one-half of these show changes, while the percentage of those showing no disease is as great as those with tracheobronchial lesions.

Not included in these tables are eleven cases with no contact history, but were using milk from tuberculous cows as shown by tuberculin tests of the animals. Of this group nine showed negative and two positive reactions to tuberculin. X-ray of the two reactors showed no evidence of disease.

It is interesting to note the small number of cases of scrofula. Of the twelve hundred fifty-one there were scarcely half a dozen cases.

The early symptoms as previously mentioned were of no significance in these cases as they were brought in as contacts or for precaution. In those showing no disease the symptoms were as prevalent as in those with positive lesions. Also a rise of one or two degrees of temperature means little in a child unless it persists for days.

A most important part of the program of the Bureau is an attempt to examine all the adult members of the household from which a case of tuberculosis comes. It is necessary to control all sources of infection to prevent the spread of the disease in the child or young adult. In the adult cases the tuberculin test is only useful in selected cases, and is dispensed with as a routine. It is useful to determine if infection with tubercle bacilli has taken place.

Our experience has definitely convinced us that with the proper procedure tuberculosis can be diagnosed in children in the latent stage, before symptoms are apparent. Practically all these cases do not cough or get up sputum so there is no need of isolation except in cases where this is true. They are as a rule as well nourished as the non-tuberculous cases. It has been found that if all other defects are corrected and they receive the ordinary care due any child, they will usually do well, providing there is no further exogenous infection.

One great value of this work is that the presence of the reaction and the X-ray findings present concrete evidence to the parents of the danger of contact with careless cases of tuberculosis and stimulates them to activity in the control or separation of the case. It also serves as a stimulus to the physician which is often very essential, assisting him more clearly to realize that the child is in danger of developing clinical tuberculosis in early adult or later life. Thus it gives the physician an opportunity and a definite point of contact in his follow-up work to teach the youngster the importance of being on the alert for early symptoms of tuberculosis that may occur in later life and the value of immediate and proper investigation.

We often see patients of middle age who had their first breakdown in their late teens or early twenties and this not recognized due to lack of proper investigation.

Many times, even when the young adult has

been well instructed, we find early cases of tuberculosis on routine examination where the symptoms were overlooked. This serves to emphasize the importance of re-examination of contacts three or four times yearly, and X-ray when in doubt as to the presence of active pathology. It will be found very helpful to X-ray the chest every one to two years routinely when there is evidence of latent lesion or continued contact with careless cases of tuberculosis.

Since it is often difficult to determine the true type of pathology by studying one set of plates, the serial films over a period of months or years are extremely valuable in proper diagnosis and treatment of the disease.

I believe it is very important to tuberculin test all of the children and young adults of high school age. X-ray films of the reactors will reveal early active tuberculous pathology is a small percentage of the students. These will be cases that have been entirely overlooked and can be gotten on the cure before they reach the moderately advanced stage or worse, as so often happens in these young people.

This is especially true in the negro race. It has long been recognized that it is most difficult to make an early diagnosis of tuberculosis in the negro of any age, more especially the younger adult, where the mortality is highest. In the early stages they present few, if any, symptoms and usually atypical if any abnormal physical findings. After there is sufficient pathology to cause toxicity, symptoms will appear, but it is usually moderately if not far advanced at this time. It is true that if they were alert to the early symptoms the cases would be recognized earlier, but too often have I tried in vain to get symptoms, and elicit signs of pathology in a contact case, yet return in three to six months and find a far-advanced case of tuberculosis.

I do not believe that any appreciable number of tuberculosis cases in early stages will be diagnosed in the negro race without the use of tuberculin tests and X-ray as a routine measure. This may seem impracticable but by using the contact group as a nucleus and working in the schools and colleges it could be done to a great advantage.

When the child or adult has begun to run symptoms, such as malaise, loss of weight, cough, expectoration, anorexia, hemoptysis, dyspnoea, and others, it must always be borne in mind that there are diseases other than tuberculosis that might cause the same symptoms. The presence of rales, breath changes, dullness, and other abnormal fiindings in the chest indicate pathology of some type, but taken alone are unreliable as a basis of diagnosis. Likewise, the X-ray alone does not tell the whole story.

In recent years it has been realized to a certain extent that one or two negative sputums do not indicate the absence of tuberculosis, but far too frequently the importance of sputum examinations is overlooked. We recommend a series of not less than ten sputum examinations on all questionable cases, where any sputum is raised. We have found as many as eight negative and the ninth and tenth positive. Not only should the sputum be examined for tubercle bacilli, but for fungi and other organisms. Even after doing all of this it is sometimes necessary if he is running suspicious symptoms to put the patient on the rest cure, while every available means is used to rule out other diseases, and the case kept under close observation for months.

It is clear to me and I hope I have made it clear to you that the diagnosis of early tuberculosis is based on the whole picture and the use of every aid in diagnosis, not by observing any one feature to the exclusion of others. I repeat that the early recognition of tuberculous infection by the use of the tuberculin test in childhood, and the discovery of the presence of latent lesions by X-raying the reactors, is of supreme importance in the early diagnosis, treatment, and control of tuberculosis.

With close observation and supervision of the child to adult and later life, by routine examinations, serial X-rays, and sputum tests when indicated, the family physician will be enabled to make an early diagnosis of active tuberculosis when it occurs and prevent the spread of the disease by that individual, thus rendering service of untold value to the individual and community.

Case Reports

H. B. Family:

H. B., white, father of two children, age 32, far-advanced case of tuberculosis for three or four years or longer. Was in home with children before going to sanatorium. X-ray shows cavities and some fibrosis.

Mrs. H. B. (Fig. Ia), age 27, far advanced tuberculosis with thin walled cavities and no

Fig. Ia Fig. Ib

signs of fibrosis or calcium deposit. Died within two years after onset of disease.

A. B., age 4, no symptoms or signs. Two plus reaction with .01 mg. O.T. X-ray (Fig. Ib) shows fan like area of infiltration with some calcium deposits in the parenchyma of the upper part of left lung. Child was separated from parents and in six months returned looking well, with no symptoms or signs and X-ray showing no change in the latent lesion of the left lung.

P. B., age 3, no symptoms or signs and one plus reaction with .01 Mg. O.T. X-ray is negative. Also separated from parents and returns in six months showing no symptoms, physical or X-ray signs of tuberculous lesions.

J. W. Family:

J. W., white, age 36, father of three children. History of cough, expectoration, fever and weakness over a period of three or four years, beginning about 1919 or 1920 and gradually improving up until a year or two ago. Now complains of shortness of breath, weakness and pains in chest, but no cough or expectoration. No abnormal physical findings on examination of chest. X-ray (Fig. IIa) shows numerous areas of calcification throughout both lungs, indicating healed miliary tuberculosis.

Mrs. J. W. is apparently a healthy woman.

R. W., age 11, the oldest boy, came in as precaution, with no symptoms or signs of tuberculosis. One plus reaction with 1 mg. of O.T. X-ray (Fig. IIb) shows latent lesions in hilum region on both sides and in lung field opposite second interspace on right side.

V. W., age 9, no symptoms or signs and one plus reaction with 1 mg. O.T. X-ray shows questionable latent lesions in hilum region.

E. W., age 8, no symptoms or signs and negative reaction to .01 and 1 mg. O.T. Not X-rayed.

Note: It is assumed that the sputum of the

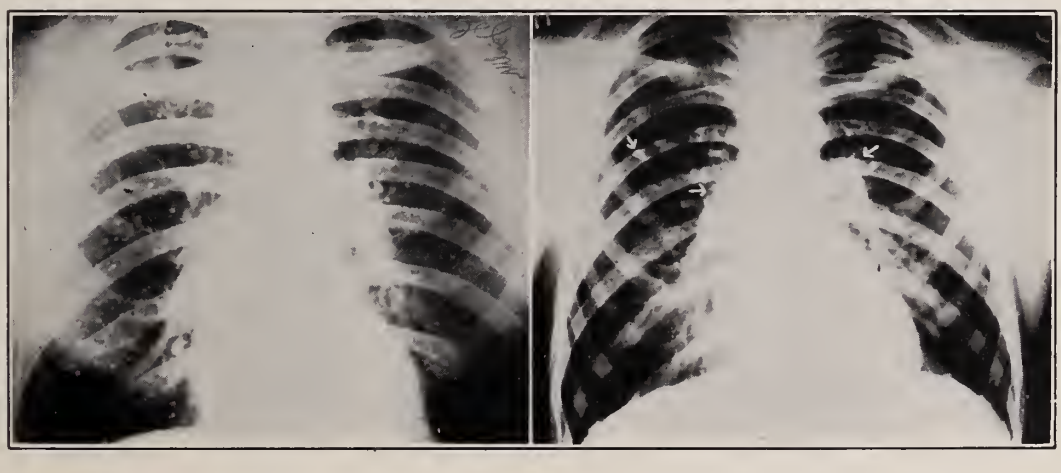

Fig. IIa Fig. IIb

father became negative for tubercle bacilli, before or during the very early life of the younger children, whereas, the older boy had longer exposure during his most severe illness.

I. B. Family:

I. B., colored, father is apparently a healthy man, but his wife, the mother of these children, died with tuberculosis two or three years ago.

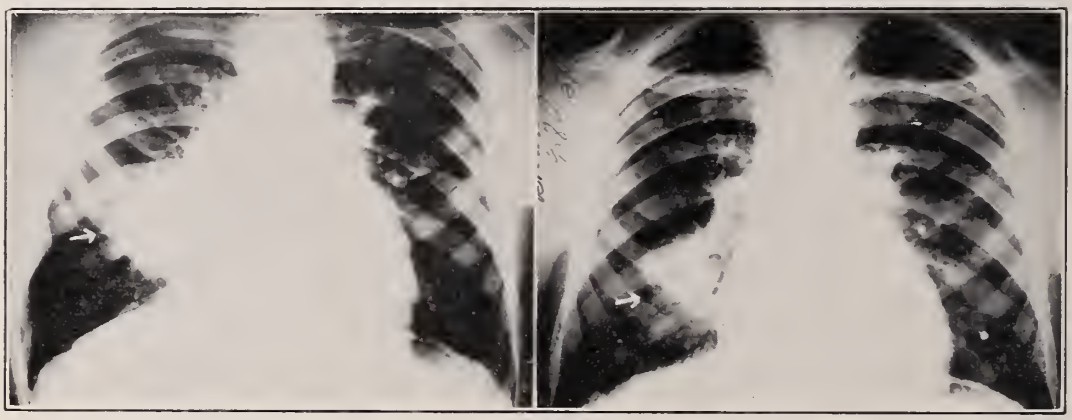

Fig. IIIa

Fig. IIIb

G. B., male, age 9, came in as a contact with no symptoms or signs of tuberculosis. Looks well. Two plus reaction with .01 mg. O.T. X-ray (Fig. IIIa) shows latent lesions in hilum region on left side and large lesion right base, that appears to be in exudative stage. Sanatorium was recommended, but being unable to go, he rested irregularly at home. He returned eight months later, having gained five pounds and no symptoms or signs. X-ray (Fig. IIIb) shows some clearing of the basal lesion which illustrates importance of separation of contact.

C. B. and I. B., brothers, age seven and eleven, respectively, showed no symptoms or signs. Both had two plus reactions with .01 mg. O.T., but no definite X-ray findings.

E. B., a grown sister, is a minimal, arrested case of tuberculosis since being treated at Piedmont Sanatorium.

Reference

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PHYSICAL FACTORS IN CORONARY OCCLUSION.*

J. MORRISON HUTCHESON, M. D., Richmond, Va.

It has long been customary to think of cardiac pain as angina pectoris and to consider bodily effort as its chief provoking cause. Until recently cases of acute coronary occlusion with pain were usually included under the designation angina unless, perchance, their cardiac significance was missed entirely and some such fanciful diagnosis as acute indigestion supplied. As the distinction between coronary occlusion and other conditions that produce anginal pain is not yet entirely clear, it is not surprising that physical strain is still held to be a factor of more or less importance in the causation of occlusion.

While it is generally recognized that sudden closure of a coronary vessel is by no means dependent upon physical exertion, the possibilities of this factor are accorded considerable emphasis. Thus, Levine, in his Monograph on Coronary Thrombosis writes: "The attack of coronary thrombosis, unlike the typical anginal attack, often is not precipitated by effort. It frequently occurs during rest, while sitting quietly in a chair or during sleep. To be sure, ordinary or more unusual effort is also found to be a precipitating factor." As this question is one of considerable practical importance, I have undertaken to discuss it somewhat in detail.

Coronary thrombosis, whether sudden or gradual, is in the large majority of instances an end result of atheroma affecting the coronary vessels. During this process the lumen of the vessel narrows, the walls become brittle and

*Read before the sixty-second annual session of the Medical Society of Virginia, at Roanoke, October 6-8, 1931.

calcareous plaques appear on the endarterium. These plaques tend to rupture or to ulceration and, with the blood flow already retarded as a result of narrowing, a thrombus is readily formed.

By no means all patients with atheromatous or sclerotic coronaries have thrombosis, though the essential anatomical changes are present. These changes are those usually found in the hearts of patients who suffer from attacks of angina, doubtless the result of vascular narrowing to the extent of rendering blood flow insufficient to meet the demands of unusual exertion or, at times, of ordinary exertion. Attacks of pain induced by exertion and relieved by rest may be looked upon, therefore, as the result of relative inadequacy of the circulation in the myocardium, though the exact mode of pain initiation is not understood.

When thrombosis of a vessel of considerable size forms rapidly, absolute coronary insufficiency results. In addition to pain of anginal character, which is often agonizing beyond description and difficult to control, evidence of structural damage to the myocardium appears together with manifestations of suddenly impaired function. To be sure, occlusions of small branches and even of main coronaries undoubtedly do take place, probably slowly, without producing sufficient cardiac disturbance to permit their clinical recognition.

The attack of angina may be excited in susceptible individuals by several factors other than exertion. Excitement, cold, overeating or tobacco often bring on a paroxysm, probably by increase of heart work and acceleration of blood flow. Just what precipitates a thrombosis is not clear but, if one accepts the pathological background as being a roughening of the intima of a vessel of diminished calibre, further slowing of the blood flow rather than acceleration would be expected to promote clotting.

In order to investigate the question of possible exciting factors, especially physical factors, in acute occlusion from the clinical standpoint, I have reviewed my own private cases and selected 50 patients from whose histories the circumstances attending the attack could be clearly ascertained. Notwithstanding a certain amount of selection, for the reason mentioned, it is believed that these patients represent the picture of coronary thrombosis as it is seen in the average practice.

In this group there were 45 males and 5 females, ranging in age from 30 to 83 years. The age distribution was that usually found with this type of pathology, the largest number occurring in the sixth decade of life. Of the 50 patients 21 died in or soon after the attack and 29 survived.

It is interesting to note that 14 patients had previously had treatment for angina, and of this number the histories in 5 and the autopsy findings in 2 indicated that thrombosis had already occurred previously. Eighteen patients had had mild pain or some type of discomfort on exertion, not severe enough to require treatment, and 18 had experienced no symptoms whatever referable to the heart.

The occupations and habits of these 50 patients were various but the large majority could be classified as those whose pursuits involved mental rather than physical effort, a circumstance that has been observed in the incidence of coronary disease generally. Five had retired from active work, 9 were professional men, including 5 physicians, 2 ministers, 1 dentist and 1 teacher. Eighteen conducted some sort of business such as banks, stores and factories. Five were farmers. There were 2 laborers who did hard physical work. The remaining 6 men consisted of 3 bookkeepers and 3 automobile salesmen. All 5 women were married, had borne children and were actively engaged in managing their homes.

The onset of symptoms, usually pain, occurred in 38 patients, or 76 per cent, while they were at rest, either sitting or reclining. Of this number 19 were in bed and of these 15 were awakened from sleep by pain. Nine patients were walking when symptoms began and 2 were driving automobiles. One patient only, a laborer aged 59 and seeking compensation, connected his attack with exertion. He was resting at home when the attack began but had been subjected to extraordinary strain 3 or 4 hours previously. In his case there was no history of former attacks, though there was evidence of generalized arteriosclerosis without cardiac enlargement of consequence.

No patient gave a history of unusual exertion, of excitement or of exposure to cold at or immediately preceding the time of the attack. In a few instances the attack began soon after an ordinary meal. On patient was attending a picnic, had eaten a hearty dinner,

and about an hour later, while sitting quietly and comfortably, his pain appeared.

From a consideration of the type of pathology upon which coronary thrombosis depends and from the clinical facts herewith presented, it seems unlikely that exertion or any other cause of accelerated blood flow has any bearing whatever on the occurrence of thrombosis. On the contrary, it appears that slowing of the circulation rather than acceleration would promote clotting. In patients whose coronaries are sclerotic, restrictions of exercise and similar measures, while useful for the control of anginal pain and congestive failure, probably have no effect in the prevention of thrombosis. Theoretically, at least, the use of drugs such as theophyllin to promote coronary blood flow would prove more effective.

Professional Building.

DISCUSSION

DR. J. D. WILLIS, *Roanoke:* Coronary thrombosis comes like a thief in the night, without warning. Dr. Hutcheson's paper calls our attention to an ever-increasing serious condition; that is, sudden death from heart attack. We see it on every hand. It seems to me that a condition that is becoming so rampant should be studied definitely, with recommendations as to how it should be controlled. The prevention of heart disease is one of the big problems before the medical profession today. We are in this age victims of our own efforts and indulgences to such a great extent that education is imperative. It seems to me that more insistence should be laid on periodic health examination, such examination being the keynote to this situation—better understanding of the physiology of human life and the limitations of our efforts and what we can stand. I am not going into the technical discussion of Dr. Hutcheson's paper, for the reason that his coronary findings are well understood.

BIRTH CONTROL.*

WILBUR M. BOWMAN, M. D., Petersburg, Va.

No attempt will be made to cover entirely a subject of such vital importance in the few minutes allotted, as it would be obviously futile. It is merely to bring before the Society in sufficient form certain data gathered here and there in the hope that the impression will be such to cause serious afterthought. The writer is aware of the fact that there is and always will be opposition but the balance of evidence seems to be overwhelmingly on the side of the advocates of the birth control movement. It would be foolish to believe that the medical profession in general would not endorse such a humane and necessary progressive step in the advancement of medical science, yet we have neglected to bring this subject where it rightfully belongs for discussion. It is unquestionably a medical problem first and foremost, but we have remained idle and watched from the side-line as lay organizations have carried on in a magnificent manner. Is it taken for granted that physicians already possess complete knowledge of contraception, or that it can come by instinct or inspiration? This knowledge has to be acquired, though it is not surprising to learn that the percentage of physicians who know little or nothing about scientific contraceptive measures is tragically amazing, especially in view of the fact that in most of our medical schools the teaching of this subject is inadequate or lacking altogether, and our usual medical books are in the same predicament. A physician states that he has had doctors in his office from the West and South and from small urban and rural communities in general who have not heard of, handled or seen any contraceptive device. Is it not just as important for a physician to know how to prevent an undesirable pregnancy as it is to prevent the spread of typhoid fever or the contraction of any other infectious disease? In answer to a questionnaire a physician replies that "it should be no more difficult for a woman to consult a doctor about prevenception than about indigestion. There is nothing indecent, obscene, illegal, or unethical about one more than the other." The subject is not new by any means, as we find it being practiced as early as the thirty-eighth chapter of Genesis, 8, 9, and 10 verses. The New Testament speaks of a eugenic program more drastic than modern advocates of birth control would care to support. A few years ago the subject was taboo both socially and professionally, but now this attitude has entirely changed. The movement has increased to a world-wide extent and is destined to become a part of our National health programme. Prominent men of science, literature, and public affairs have endorsed and given their support to the birth control cause. Forty-eight medical societies have endorsed it as well as prominent religious, political, social, and educational groups. The public evidently wants this advice as evidenced by over a million letters received by Margaret Sanger from women, mostly mothers.

*Read before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, October 6-8, 1931.

The American Birth Control League was founded by Mrs. Margaret Sanger in 1921. "It is the League's purpose to make birth control information generally available, particularly among the poorer classes, and so to bring about the reduction of maternal and infant mortality, of hereditary diseases, of criminal abortions, and of prostitution. In its educational aims it is especially desirous that families be as large as possible within reasonable limits of health, finances, eugenical fitness, and other considerations. Birth control in this sense is a means of spacing children and not a means of preventing families." In 1923 a clinic was located in New York City, and to date over 20,000 women have been given contraceptive advice here alone. In this country fifty-eight clinics are established. There are seventy well organized centers throughout the world and 250 other centers. Birth control methods are freely used in England, Holland, Norway, Sweden, Austria, Russia, Germany, and Japan, while clinics are now operating in India and China. Holland has had legalized birth control since 1878. The British government now allows such instruction to be given at all its Maternal, Infant, and Welfare Centres. The Public Health Department of Los Angeles has already established eleven clinics, making this knowledge available to the mothers who seek advice. That all religious groups are represented is evidenced by the fact that of the 1,340 cases reported at the Illinois clinic, 782 belong to one or another Protestant faith, 391 were communicants of the Catholic church, 146 were Jewish, twelve orthodox Greek, and only nine gave no religious affiliation. It can hardly be claimed that women apply to these clinics in order to shirk motherhood, for among the thousands of applicants the average number of pregnancies is four, of living children three, and nearly 25 per cent have five or more living children.

"In the United States most clinics giving contraceptive advice are limited by law to accepting cases with medical conditions or histories which would make pregnancy inadvisable for health reasons. In a few States such advice may be given, in the absence of special restrictive legislation, for social and economical reasons." Virginia (according to a letter from the Attorney General) has no laws in regard to birth control and no attempt has been made to pass any. The State of New York has a space law—that is, contraceptive advice may be given to any mother whose offspring is not over one year of age regardless of her physical condition. The Committee on Federal Legislation of Birth Control is attempting to lift the Federal legal bans prohibiting the dissemination of contraceptive information through the mails. Mrs. Sanger explains the situation as follows: "We have twenty-six States in which there is no restriction in giving or getting contraceptive information by anyone. In addition, we have eleven States which allow physicians to give such information (provided they already have such knowledge to give). Yet the Federal laws make it a crime for doctors in these same States to use the United States mails, or common carriers, for contraceptive supplies, books, or pamphlets, which means that the doctor, in giving oral information, must 'bootleg' supplies for the use of his patients and 'bootleg' books or reports by which he could improve his knowledge." This law obviously has a bad moral effect and has perhaps done more to cause a feeling of guilt about birth control and discourage interest in the movement by the medical profession than anything else. That the Federal law does not interfere, however, with practical and constructive work is evidenced by the successful functioning of the fifty-eight clinics. Dr. J. W. Williams (Professor of Obstetrics, Johns Hopkins University, and Obstetrician-in-Chief to the Johns Hopkins Hospital) states: "I feel very strongly that our State and National laws should be amended so as to make it possible for physicians to prescribe contraceptive means with the same freedom and decency as any other prophylactic or medical device, and I resent very strongly the attempt of the Government to interfere in this respect, as I regard it as an unwarrantable aspersion against the integrity and bona fides of the medical profession." Dr. William Allen Pusey (former President of the American Medical Association) says, "The first prerequisite to satisfactory study of any subject is free access to knowledge of it, and that necessitates the unrestricted interchange of experience and information among scientific men. That is not allowed now upon the subject of methods of birth control. We are not even in a position where we can freely determine the merits and demerits of the sub-

ject. It is not that methods of birth control are not discussed and practiced; they are everywhere. But the facts, and the fiction, are passed from individual to individual—ignorantly, crudely, unsatisfactorily, and in ways that are often vicious. It is only scientific, decent discussion of the subject that is prevented, the sort of discussion that is necessary and can only be had, when it is untrammeled, among self-respecting men, who can bring to its consideration knowledge and wisdom. This situation is medieval. From the history of similar situations in the past it cannot be doubted that it must in time give away. To see that this is brought about as quickly as possible is a thing worthy of the vigorous efforts in that direction that are now being made."

The term "birth control" is sometimes erroneously taken to mean many things, as criminal abortion, "no-child" marriages, prolonged sexual abstinence, etc. "Prevention or control of conception" would perhaps be better terms to use. There are various means as:

1. Continence (total abstinence or self-control) which should never be generally recommended.
2. Sterilization.
3. Chemical and mechanical methods suitable to each individual case.

Because the terms are often confused by the laity and even somewhat linked together by physicians, it should be stated that birth control and abortion are entirely different. Abortion destroys the already fertilized ovum or interferes with its development, while contraception prevents the union of the two cells, thereby preventing conception from taking place.

The justified need of birth control is obviously widespread. Nearly every married couple in average circumstances passes through a period when the birth of another child would be a family disaster. Such need may be seen in the case of the poor, where children are born too frequently—and they are the ones the advocates of birth control are particularly anxious to reach. Especially is it needed in the cases of mental and physical deficiency. At present there is a serious problem of maternal mortality confronting all of us in this great and enlightened country of ours while our infant death rate is excessive and not to be boasted of. Sad and unfortunate it is that the United States is given the credit of having had since 1924 the highest death rate from childbirth of any civilized country in the world—an almost unbelievable fact. As Will Rogers recently stated, "The way we lose 'em here it would be safer, if you are figuring on having a baby, to go to some uncivilized country like India or Africa to do it." Present at a dinner in New York were a number of prominent women, including Mrs. Sloan, Mrs. Theodore Roosevelt, Sr., Mrs. Hoover, Mrs. Lindbergh, and Kermit Roosevelt's wife, all to arouse not only interest but horror in our unbelievable maternal death rate. Lieutenant-Governor Lehman, in an address before the annual conference of health officers and public health nurses of New York State, called for closer cooperation to cut maternal fatalities, and stated that the problem was being treated "far too lightly." A newspaper article quotes a Canadian rector as saying he "could not permit women to go to their deaths from bearing too many children because doctors and governments will not inform them." He had announced that he would give birth control information to any young woman of his parish about to be married. Believe it or not, there has been no apparent improvement in maternal mortality in the United States during the past decade. Yet it is definitely acknowledged that a large proportion of sickness and mortality during pregnancy, labor, and puerperium is preventable. Statistics from Holland show that since 1878 there has been a gradual lowering in the rate of deaths among mothers and children, a reduction in the proportion of stillbirths and abortions. Tables of maternal mortality give Holland a place at the top and indicate that three times more mothers' lives are saved there than we can claim for this country. It is obvious that diminished childbearing diminishes the opportunities for deaths from pregnancy and puerperal complications. In other words, statistics readily show that maternal mortality increases with the number of children born, starting with the fourth offspring and reaching the maximum at the eighth and later. Multiparity cannot be overlooked even though faulty obstetrics appears responsible. Just recently while attending the case of a young woman in labor, a notice was received from Philadelphia that her mother had just died at the age of thirty-four years with her thirteenth baby.

Experience has demonstrated that the mortality rate for infants is higher for those born at short intervals after preceding births. Statistics from the Childrens' Bureau, United States Department of Labor, show that as the number of years between births increase up to four, the infant mortality rates decrease. It is an important fact to know that those nations possessing the lowest birth rates manifest likewise low infant mortality rates and low general death rates. Wile states that "this fact is indicative of a wholesome state of affairs even though it may lead to a slower natural increase in population of communities. The difference between the birth rate and the death rate is significant in that it represents a far higher health value to have a diminished birth and death rate in place of the older types of high birth rates and correspondingly high death rates. The gain to the public is obvious in terms of the decrease of deaths, economic loss, familial anxiety and communal distress." With proper regulation of reproduction, such as reliable contraceptive measures could accomplish, this unnecessary waste of human life and energy could be greatly diminished.

Ignorance of contraception is a fundamental cause of abortion. There has been a notorious increase in the number of abortions in the United States, estimated to be over a million a year, and resulting in a large percentage of deaths. This clearly proves that women will resort to abortion in the absence of reliable birth control information. "Particularly striking is the number of induced abortions admitted by patients seeking contraceptive information from the Clinical Department of the American Birth Control League, N. Y. C.," says Hannah M. Stone, M. D., in the director's report for 1925. "These totaled 1,434, varying from one to as many as forty abortions in one particular case." Dr. Abraham J. Rongy, chairman of the Greater New York Committee on Health Examination urges that legalized birth control information be supplied to all who waut it in order to discourage criminal operations to prevent child birth. He declares that 1,000,000 such operations are performed every year by physicians in the United States, and 250,000 by others not physicians, and the cost to the victims is $100,000,000.

Time will barely permit the writer to more than state briefly, without discussion, certain fundamental facts (not already mentioned) concerning the relation of population pressure to control of fertility as given by Burch in his very interesting article on "Population Pressure and Birth Control." These may be enumerated as follows:

1. High birth rates and large families are generally accompanied by poverty.
2. High birth rates and large families are generally accompanied by ignorance and illiteracy.
3. Uncontrolled reproduction is generally accompanied by bad housing.
4. Uncontrolled reproduction is generally accompanied by unemployment.
5. Uncontrolled reproduction is generally accompanied by undernourishment.
6. High birth rates and large families are generally acompanied by child labor.
7. Uncontrolled reproduction and large families are often the incubators of disease.
8. Uncontrolled reproduction is a fundamental cause of crime resulting from both environment and heredity.
9. Continence is neither a practical nor normally desirable method of birth control.
10. Ignorance of contraceptive information is a fundamental cause of what is called the "anxiety neurosis."
11. Continence-in-marriage and ignorance of contraceptive information are fundamental causes of infidelity.
12. Ignorance of contraceptive information is a fundamental cause of illegitimacy.
13. Ignrance of contraceptive information is a fundamental cause of infanticide and abandonment.
14. Ignorance of contraception is a two-fold cause of prostitution.
15. Controlled reproduction has a tendency to stimulate the marriage rate and increase the marriage population.
16. Knowledge of contraception will enable married couples to live a more normal sex life.
17. Ignorance of contraceptive information causes population pressure that leads to social unrest and war.
18. Ignorance of contraception is a fundamental cause of famine and pestilence.
19. Knowledge of contraception will improve the race.
20. Knowledge of contraceptive information will strengthen rather than weaken morality.

21. Nowhere in literature or history are the terrible evils of population pressure and the need for contraceptive birth control brought out more forcibly than in the Bible.

Now that contraception is assuming its place in the rank of preventive medicine, it is hoped that physicians will avail themselves of this knowledge so that when women seek advice they will be in a position to consider all the circumstances in these cases and allow themselves to be guided by their social, ethical, and humanitarian instincts as well as their scientific, medical judgment.

In closing this article, the writer wishes to pay tribute to the memory of Dr. James F. Cooper—who did so much to bring the subject of birth control in a personal way to thousands of his colleagues—by using his own words, as follows: "The ideal conditions will exist when scientific, effective contraceptive methods are as freely available to the poor as the rich; when physicians will have no legal restrictions in giving advice, and women will have no embarrassment in receiving or using contraceptive measures; when children will be conceived only when the physical and mental health of the parents and the social and economic outlook are such that the new generation will have a fair chance for a normal life."

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DISCUSSION

DR. W. B. MCILWAINE, *Petersburg:* I was going to make a different kind of discussion on this paper, but, seeing that Dr. Bowman was cut short, I will tell you what they are using in the prevention of conception. By the way, I feel that birth control is a very bad name to come before a medical society. That is the term used by the laity. I think medical men should use the term "control of conception."

In these clinics they are using, with practically one hundred per cent success, a diaphragm pessary, with lactic acid jelly. The diaphragm pessary is fitted by the doctor in his office or at the clinic. In my opinion, this service should be available at every clinic, for it is the poorer class of patients who have so many children, who can not get this advice from their private physician. In the clinic, or in your private office, teach the woman how to insert this pessary. The use of lactic acid jelly with the diaphragm will prevent in practically all cases. This is being used in the larger cities and among the poorer classes, where the responsibility rests primarily upon the woman. These pessaries can be obtained in the larger cities, but, as you know, the Federal Government will not allow us to send them through the mail. If any physicians here are interested in this life-saving method, they can get in communication with Dr. Margaret Sanger, of New York City, and other interested people.

I do not feel that I am competent to discuss this subject, except that I feel it should be brought before the medical profession in the spirit of leading the laity and looking toward the future. I believe you would agree with me if you could see these women as I do, coming to the office with seven or eight children, and looking as if they are on their last legs. They say they do not feel they can have any more children, from the standpoint of economics, and they do not know where to go for advice. I think every physician should have the information at his command and be able to give a woman contraceptive advice. The physicians, I think, should be in position to take the leadership in this movement, which will inevitably come.

EPIDEMIC ENCEPHALITIS.*

JOHN R. GILL, M. D., Petersburg, Va.
Central State Hospital.

Epidemic encephalitis was first described in 1916-17 after an epidemic of this disease had occurred in Vienna and France. Von Economo is best known of the men who first described the disease. He called it lethargic encephalitis. Since that time the disease has become world-wide in importance and epidemics have occurred in every country of the world. The first epidemic of encephalitis followed in the wake of the great influenza epidemic which swept over the world.

The disease occurs more frequently in young adults but it has also been observed both in the very young and old. In one British series 25 per cent of the patients were between the ages of ten and twenty. The incidence of the disease showed a marked decline after the age of forty. Both sexes are equally affected.

There is a definite seasonal occurrence and the majority of the cases occur in the first quarter of the year. The peak is usually reached in February or March. It occurs more frequently in the town than in the country, which is probably due to the close contact and the greater opportunity for transmission.

The mode of transmission is not absolutely known but personal contact is sometimes responsible. This view is supported by the three following facts: There is a restricted distri-

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bution of cases in the small community and multiple cases have been known to occur in families; also new born children are infected either in utero or after birth by mothers who have the disease.

The incubation period has not been definitely learned but it is usually supposed that it varies from two days up until two to three weeks.

The cause of epidemic encephalitis is unknown. Some investigators believed that an ultro-microscopic filterable virus is the cause of encephalitis. Flexner seems to have disproven this claim. Rosenow claims that encephalitis is caused by streptococci but he has failed to prove his case. Other workers think there is a definite relationship between influenza, herpes febrilis, and encephalitis. It is possible that mutation of some of these causative agents is responsible for encephalitis.

The pathology of encephalitis is more or less characteristic of a toxic infectious condition. There is a perivascular infiltration of lymphocytes in the brain with an occasional small hemorrhage. Large subarachnoid hemorrhages have been described but these are rare. There is some chromatolysis and degeneration of the ganglion cells. In chronic cases there is considerable proliferation of the glial cells.

The chief lesions of encephalitis are usually located in the upper part of the mid-brain, the basal ganglia, the pons and the upper medulla. The cerebral cortex is comparatively little involved. The spinal cord is occasionally infiltrated but more frequently is not involved.

The symptoms of acute encephalitis are many and varied. The first signs or symptoms depend upon the site of the initial lesions. There is usually nausea, vomiting, headache and pains in the back and limbs. There may also be a mild delirium and blurred vision.

Fever is only present during the acute stage. The patient's temperature ranges from 99 to 101 Fahrenheit. Occasionally the temperature will go much higher in the severe cases. Headache occurs in the majority of the patients. The headache is usually mild.

Lethargy is one of the most constant symptoms of epidemic encephalitis and led to its being called lethargic. In this case the patient will feel very drowsy and gradually become comatose. The patient could be aroused from the coma and be made to answer questions or carry out commands and then would immediately fall back into a stupor the moment he was left alone. In some cases insomnia takes the place of lethargy and the patient is unable to sleep.

Delirium is the most common of the mental disturbances of the acute stage and frequently occurs with excito-motor symptoms. It is characterized by the clouding of the consciousness and disorientation. Excitement and mental exaltation may be present without clouding of the consciousness.

The focal symptoms vary from patient to patient. The ocular disturbances are the most constant. Diplopia is the chief symptom. The pupillary disturbances are very common. Irregular and unequal pupils with impairment both to light and accommodation are the usual findings. Paralysis of the external eye muscles is common. Those muscles that are supplied by the oculo-motor nerves suffer most frequently. The external rectus muscle is the most commonly affected. Blurred vision is a very frequent complaint, and probably occurs in 50 per cent of the cases.

Facial weakness is very common and may be either unilateral or bilateral. Vertigo is present in a majority of cases. In some cases vertigo is due to an involvement of the vestibular tract and is associated with an unsteady gait and nystagmus. Choreiform movements occurred much more frequently in the earlier epidemics than recently. It was usually found in those patients who showed marked mental excitement. The choreiform movements in epidemic encephalitis differ from those in chorea as there is an absence of facial grimacing. Myoclonus or muscular contractions occur very frequently. The muscular twitches occur in individual muscles and not in muscular groups simultaneously. The contractions may vary from eight to eighty a minute. Hiccup occurs occasionally. There is a record of one case of encephalitis which hiccuped eight days at the approximate rate of 120 times a minute.

Numerous sensory disturbances occur in encephalitis. The sensory pain is produced by the infiltration of the posterior roots. Spontaneous pains are frequently very severe.

The reflexes are very variable, depending upon the situation of the lesions. The tendon and abdominal reflexes are frequently diminished. However, there have occurred cases where the reflexes were exaggerated.

The number of cells in the spinal fluid is

increased and frequently ranges from 10 to 100 per cubic centimeter. The cells are usually mononuclear. There may be an increase in the globulin, the sugar content and pressure. There is occasionally a luetic gold curve.

The course of encephalitis is either acute, subacute or chronic. Less than 28 per cent of the patients die in the acute stage. Some of the patients recover from the acute illness within a few weeks. In majority of the cases the disease runs a chronic form. The prognosis as to permanent recovery is rather poor. At least 60 per cent or 70 per cent of the cases show residual signs and symptoms. The residual signs and symptoms are far more tragic and incapacitating than the acute illness. There is abundant evidence that lethargic encephalitis is a chronic disease and its later manifestations are due to progressive action of the virus on the nervous system.

In chronic encephalitis the ocular abnormalities may be the chief physical signs. It is a common thing to find inequality of the pupils and an impairment of the pupillary reflexes for light and accommodation. There may be a slight ptosis of one or both upper eyelids. There may be a weakness of conjugated movement. Oculo-gyral spasm occurs frequently. This consists of attacks of spasmodic ocular movement usually upward. In the language of the patient her eyes get caught and she is unable to look down. It is an upward spasm of the eyeballs. The spasm usually lasts for half an hour.

A large number of chronic encephalitic patients develop into the Parkinsonian syndrome. The Parkinsonian syndrome is very insidious in its onset. The symptoms of which the patient first complains are slowness of movement, stiffness and weakness. The Parkinsonian attitude is usually described as one of general flexion. The neck is usually flexed and helps to produce a concave anterior curve of the spine. The upper limbs are adducted at the shoulder and flexed at the elbow. The lower limbs are flexed at the hip and knee.

The facial expression of the Parkinsonian syndrome is staring and expressionless. All of the normal expression of the face is "ironed out" and the wrinkles produced normally by a change of expression are not present. The face is mask-like. The mouth is open in about one-third of the cases and in these the saliva may run from the lower lip.

There is muscular hypertonia or muscular rigidity present which varies according to the severity of the disease. A characteristic feature of the Parkinsonian rigidity is the so-called cog-wheel rigidity. This is due to the interrupted character of the resistance encountered on rapid passive movements, and the stretched muscle will yield in a jerky manner as though the contractions alternated with the relaxations. There is a decrease in the voluntary power and weakness of the muscles. The patient shows a marked tendency to fatigue.

Articulation and phonation are both impaired. Weakness of the lips, palate and tongue lead to a slurring of the consonants and produce a marked monotony of the voice.

The gait is of a slow shuffling type. The person is frequently unable to stop quickly when pushed forward or backward. There is a decrease of the arm swing on walking.

Involuntary movements frequently occur in chronic encephalitis. Choreiform movements are more common in the acute stage but they occur as a late manifestation. Myoclonic movements usually occur. These consist of involuntary contractions of different muscles of the body. Tremors also occur. The tremor is usually inconspicuous when the patient is dressed. However, voluntary movements will bring out marked tremors. The tremors may be localized to an upper or lower limb or may be widespread over the body.

There may occur some abnormality of the respiratory system in chronic lethargic encephalitis. Changes of the respiratory rate and rhythm are frequent. Respiratory tics such as yawning, sniffling, spasmodic coughing and spitting may occur.

There are frequent disturbances in the sleep mechanism. The patient may suffer from lethargy or insomnia or both. The lethargy or insomnia is usually marked. Hall and Yates found that whatever form of sleep disorder was present in the acute stage of encephalitis was the form most likely to be present as a chronic symptom.

Metabolic and endocrine disorders occur. The most frequent abnormality is obesity. This is often associated with atrophy of the ovaries and testicles.

Epidemic encephalitis occasionally produces convulsions of an epileptiform nature. The convulsions do not occur very frequently.

The mental change which follows encephal-

itis is one of its most tragic manifestations and may simulate several types of psychosis or a neurosis. In the adult there may occur maniacal outbursts or marked depression. The depression is fairly common and many of the patients become definitely suicidal. The most frequent mental condition is one of emotional impoverishment in which the patient loses his former interests and is contented to spend his time idly. The patient may have an anxiety neurosis during which he complains of marked fatigability, inability to concentrate and nervousness. The patient often knows of his inability to concentrate. The rapid onset of fatigue and lack of attention is easily noticed in applying intelligence tests.

The character changes are very marked. These changes seem to originate in a state of irritability and a lack of inhibition. These factors help to produce an impulsive character which becomes fixed by habit or the development of a psychoneurosis. They are also emotionally unstable. Their abnormality in behavior varies from committing minor offences to acts of violence. They have frequently committed both petty and serious crimes which may vary from stealing a bottle of milk to that of committing murder. They frequently are guilty of sexual offences. I know of one case who assaulted his own mother and committed sex offence upon her. Due to this marked change in character and disposition many upright and leading citizens become criminals. It is necessary to confine many of these patients in institutions where they will be unable to commit crimes.

The prognosis of epidemic encephalitis is extremely grave. The mortality is in the neighborhood of 40 per cent. Only one-fourth of the patients who survive the acute attacks recover, and chronic progressive lethargic encephalitis is one of the most tragic conditions that is met with in medicine.

The treatment of the epidemic encephalitis is largely symptomatic. During the acute stage lumbar puncture is indicated as a diagnostic and, in some cases, as a therapeutic measure to relieve the increased pressure of the spinal fluid. The patient should of course be confined to the bed. Since it is likely that encephalitis is due to a filterable virus, it is wise to use potassium permangate solution to swab the mouth and naso-pharynx. The intravenous injections of various antiseptic solutions such as urotropin, acriflavine, etc., have been used extensively. Sodium salicylate and various heavy metals such as argotropine and orargol, have been used intravenously. For restlessness of the patient luminal or veronal may be given. The use of non-specific protein has been tried in the acute stage.

For the chronic stage hyoscin hydrobromide is beneficial in doses of 1/100 to 1/150 of a grain daily for reducing the muscular rigidity. Stramonium has been given for the same purpose with beneficial results.

Massage will often make the patient more comfortable, and tends to keep the body in a good physical condition.

The mild cases of chronic lethargic encephalitis may be kept at home under constant medical supervision. The risk of the depressed encephalitic patient committing suicide must always be kept in mind. It is necessary to commit the cases with mental symptoms to an institution for care and treatment.

Discussion

Dr. D. C. Wilson, *University:* Encephalitis, from an etiological standpoint, is the most interesting of the organic diseases, because its effect on the brain produces so many conditions that are similar to the so-called functional psychoses or mental derangements. Dr. Gill, being located at the Central State Hospital, is in position to study these mental changes and it is certainly very stimulating to see a man in his position who has made a study of these cases. In practice at large it seems to me that the most interesting thing is that encephalitis has changed in character and that now we do not see so often the gross sequelae that we did in the past. At the present time a great many milder cases are being seen, and it is pretty well decided that such things as torticollis, tics, generalized twitchings, etc., which formerly were thought to be psychic in origin are due to a previous encephalitis. When we find a person with muscle twitchings in different parts of the body that seem to have no organized foundation, we must suspect previous encephalitis. Also, these peculiar mental changes that come on are often secondary to a basic ganglion involvement.

The child's reaction in encephalitis has had a great deal of work done on it. Just what is the reaction in the adult in encephalitis? It seems to me, although I have not had the experience of Dr. Gill, there are two extremes, we might say. In the first place, there is the patient who is so involved in his disease process that he shows deterioration of personality, becoming a moral delinquent. Then we have the other type of individual who is handicapped by his disease to such an extent that his personality breaks down, and we get the type of mental change which follows personality break-up. So we get two types of psychosis following encephalitis. But the most important thing is that many of these people going around with certain twitchings of one kind and another, as well as a certain slowing up in thought, are not due to some mental disorder, some complex perhaps, but are due to a previous disease.

DONT'S IN DERMATOLOGY.*

J. BEVERLY DESHAZO, M. D., Ridgeway, Va.

A great many members of the medical profession call skin diseases very simple things unless they become afflicted themselves; however, when ninety-nine out of every hundred have one or more at some time of their lives they loom up in importance. There are around two hundred that are likely to appear single or in multiple in the practice of any general practitioner, and a prescription must be given or he is rated a poor doctor by the patient. It is a duty not to add to their suffering, and how to proceed is the object of this paper.

In diagnosis it is common with many not to see but little of the surface when half if not the entire body should come under observation. Failure to make a note of symptoms is too frequent with a great many physicians.

Habits, occupation, diet, exposures of the patient, as well as the color, feel, odor, location, whether worse day or night—indeed, whether a disease at all, or an eruption from treatment—enter into the consideration of too few giving professional services.

Frequently there is more than one disease present, several at times, and it is difficult to name the fundamental malady. A case of scabies often causes an urticaria that overshadows the first and, if neglected, an eczema may follow because the primary cause remains, years of horrible existence following this mistake. One case in a nearby city in North Carolina baffled the leading physicians for six years.

Weak applications of drugs affect blonds and children much more than the others. Going over one-third strength for young children in local medication is far too common an error, and over half strength with strong drugs becomes decidedly cruel in a large majority of acute inflammations of delicate skins.

Except in infections disorders, it is wrong to depend upon external applications alone because nearly all acute inflammations have an internal fundamental cause. So important is this if uncertain what to do, it is far better to treat the case generally as if no skin disease was present and use none or the very mildest external remedies.

It is an error, too common, to prescribe arsenic often in this field because acute diseases are generally made worse by it. It is really one of the best drugs in use today when indicated, but the specialist rarely prescribes it because of its limitations.

The novice who uses vaccines promiscuously is going on a long venture as the latest books and journals on the subject, as well as the leading dermatologist who have been using them, are not landing them to the skies as formerly. They have a field, but not a very inviting one for the general practitioner.

If desiring a speedy cure, it is an error to give a patient anything to use that hurts worse than the disease. Better make test at the office and play safety first and retain the patient by doing this.

A prominent doctor once stated his knowledge of skin diseases amounted to what oxide of zinc ointment would cure and what it would not cure. If doctors generally appreciated his broad sympathy and good judgment tens of thousands of burnt skins from drugs would be avoided.

A very common mistake is to try one remedy after another to see if a cure can be effected by some lucky strike. If no better reason can be found, it is far better to refer these unfortunates to one more conversant with such troubles and trust finances to a higher plane.

Most of the worst cases of dermatitis that finally find their way to specialists are caused by the application of too strong drugs or of medicated soaps sold throughout the country. Frequently days and days are required to get them well of the damage done by the drugs before beginning treatment of the disease.

It is a great mistake to apply acids on corns and warts, as the day has arrived when these can be gotten off without pain. The same can be said with more emphasis of arsenic and zinc chloride to cure cancers.

Unless positive of the action on the skin, it is bad policy to use freely applications of any strong acid or alkalies, salicylic acid, phenol, chrysarobin, zinc chloride, mercurials, sulphur, and arsenic.

Listen, phenol may cause a necrosis if not applied carefully, and the local application of zinc chloride too near is certain to cause a severe urethritis; zinc oxide on hairy surfaces often causes a folliculitis; acids often cause scars you can never hide or forget; chrysarobin near the eyes will precipitate a conjunctivitis and on the hair it produces a purple color that is hideous; and sulphur, as harmless as

*Read at the sixty-second annual meeting of the Medical Society of Virginia in Roanoke, October 6-8, 1931.

it is supposed to be, if used too freely, will cause a dermatitis that is very painful and may peel off the skin in tender places.

In chronic as well as in many acute diseases, if a cure is being effected very slowly, do not change the treatment in your impatience to get a faster one, because the experience of thousands of others teaches that great errors are the result of not letting well enough alone.

This is indeed a day of lights and rays of many descriptions. Scores and scores of physicians are caught regularly through the mails with very plausible propositions. Most of those who have made purchases are getting over their delusions. In fact, in this day of high-pressure salesmanship too many doctors are buying these wonderful lamps supposed to give out rays reputed to increase their incomes tremendously by cures promised not only in big head-line advertisements but also in vocal tones of the salesmen that stamp the doctor almost a moron unless he buys one. The careful general physician will go slow when he learns that the most popular, the ultra-violet rays, are used less and less by the specialist because the number of permanent cures by them in the hands of experts are so few that it will certainly not pay the general physician to make the investment in any of them on the market today.

The X-rays are the best addition to treatment in recent years but it is wrong to begin with this method unless skilled in the dangers in application as well as the benefits of such treatment. Since bad results may not appear until a year or more after treatment, the public, as well as the doctors, should be warned of the danger of loss of hair, of voice, not to mention burns and disfigurations of face and body that last a lifetime, because they can never be restored to normal.

It may be recorded, in passing, that, since dermatology is based on cures that are indisputable, it is one of the few specialities never infringed on by doubtful cults and so-called Christian scientists.

Poets, artists, musicians and dermatologists are born. Unless one has been blest in this field the road in dermatology is hard indeed. As evidence of this, see the havoc wrought by doctors who mean well but study little, who too often give too strong remedies, or listen to reports of proprietary drugs, patent lights or of machines that give out rays—some bad, a few scientific—they try out on their confiding patients, very often with disastrous results.

Taken in time, there is a cure for nearly every skin disease found in this country. Do not forget that the physical and mental suffering is intense and rarely appreciated in full measure. Duty demands in this day a cure be effected promptly, or else it is unpardonable not to refer them to those who love the practice and are qualified to restore them to health and happiness.

If I am able to arouse more care in handling these unfortunates in the future by the general practitioners, I will be thankful for this opportunity.

Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.

PRESIDENT-ELECT—*Mrs. W. P. McDowell*, Larchmont, Norfolk.

SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.

TREASURER—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

Cordial Cooperation.

The Woman's Auxiliary to the Richmond Academy of Medicine recently requested the privilege of assisting the Academy in furnishing the two Lounge Rooms in the new Academy Library Building, now under construction, and to be opened in Richmond, Va., next Fall.

This request, after having been considered and approved by the Building Committee and the Board of Trustees, was formally presented by a Committee of the local Auxiliary at the last bi-monthly meeting of the Academy, and was unanimously approved, and resolutions of thanks and appreciation ordered sent to the Auxiliary.

Mrs. Lee Sutton, President of the local Auxiliary, and Mrs. J. Allison Hodges, President of the Woman's Auxiliary to the Medical Society of Virginia, presented the offer, and Mrs. N. T. Ennett, immediate past-President of the Richmond Auxiliary, and Mrs. W. F. Drewry, were also present.

It is believed that this arrangement will bring into even closer contact the Academy

and its Auxiliary, and it is also hoped that other Auxiliaries in the State may desire to join in this work, for the new Library Building promises to be a central spot where all of the doctors of the State may meet when in Richmond, and use and enjoy the privileges of the Library and Building.

If any or all of these should desire to aid in any way this undertaking, it would be appreciated, and would bring the profession closer together in social fellowship.

Dr. Jos. L. Miller, of Thomas, W. Va., the donor of many valuable books and relics for the Library, when informed of this intention of the Auxiliary, expressed his great pleasure that the profession of the State could thus be given an opportunity of feeling that it had a part in the benefits the Library would afford.

This Library, containing many most valuable medical works by famous authors of the past, as well as many Incanabula now practically unobtainable, will be a great asset to the medical profession, for it is said that possibly only the Library of Congress can rival it in some special features.

The President of the Auxiliary to the Medical Society of Virginia will later communicate with the other Auxiliaries in the State, and it is hoped that interest and cooperation may be elicited, and the new Library become the center of attraction for the entire profession of the State.

Virginia's Delegates to the Auxiliary of the A. M. A.

The State President has appointed Mrs. Wm. Lett Harris, of Norfolk, and Mrs. Reuben F. Simms, of Richmond, as delegates from the Virginia Auxiliary to the New Orleans meeting of the National Auxiliary, May 9th-13th. Mrs. Southgate Leigh, of Norfolk, one of the National officers, also expects to attend and it is hoped many more of the wives of Virginia doctors will have the pleasure of attending this meeting and enjoying New Orleans hospitality.

National News.

The Louisiana and Mississippi Auxiliaries are naturally occupied with the machinery that will operate to make a success of the May 9th-13th National Convention. Their Publicity Chairman, Mrs. S. M. Blackshear beguiles us with such charming suggestions as this:

"Let us stroll through the Vieux Carré, beloved haunt of artists, down the narrow alleys where trod such personages as Lafayette, Iberville, Bienville, and Lafitte, the pirate. You will see places whose historic legend looms before you like a dream of the glamorous past and finally we will wind up for tea in an old patio garden of exotic tropical beauty. This trip is one of the features sponsored by the Women's Auxiliary during the American Medical Convention in New Orleans, May 9th to 13th."

"The function of a medical auxiliary is to interpret the medical profession to the public. So Mrs. Walter Freeman, of Philadelphia, president-elect of the Auxiliary to the American Medical Association, told the women's auxiliary to the Omaha-Douglas County Medical Society, Tuesday, March 8th, at a luncheon in her honor at the Fontenelle Hotel.

The daughter of a famed 95-year-old surgeon, author and editor, Dr. William Williams Keen, of Philadelphia, Mrs. Freeman is the widow of a physician and the mother of two. One son, Walter Freeman, is professor of neurology at George Washington University, Washington, D. C., and another is doing research work at Harvard.

The speaker was presented by Mrs. C. C. Tomlinson, new president of the Omaha Auxiliary.

As an illustration of the way the Texas State Auxiliary stimulates the quality and quantity of work done in that State, the reports show that early last fall questionnaires were sent to each County Auxiliary to be returned this spring. These questionnaires indicated the desirable and approved activities that might be carried on. You can see that looking forward to the time when that questionnaire was to be answered and returned would make an Auxiliary consider the value and local expediency of possible activities and how best to achieve goals selected. Perhaps this explains why Texas leads in Health Education, why the Student Loan Scholarship Fund grows so vigorously, why the work of organization goes forward so admirably.

The *Hygeia* Chairman of the District of Columbia Medical Society Auxiliary has placed *Hygeia* in one hundred homes in the District. This is an unusually large number of home subscriptions for one Auxiliary to secure. Congratulations. This Auxiliary has a Motor

Corps composed of its members. They furnish automobiles for activities carried on by the Corps. Three days a week they take the wel fare workers from the hospitals on their round of duties. On two days a week they carry groups of children to the hospitals for physical therapy.

The Medical Society of San Juan, Colo., testifies that its Auxiliary has been directly responsible for increasing attendance at and interest in the Society's meetings. This is a real service and should be one of the direct results of every Auxiliary in the land.

Truth About Medicine

In addition to the articles enumerated in our letter of February 26th, the following have been accepted:

Connaught Laboratories
- Insulin—Toronto, 40 Units, 10 c.c.
- Insulin—Toronto, 80 Units, 10 c.c.
- Insulin—Toronto, 100 Units, 10 c.c.

Cutter Laboratory
- Diphtheria Toxin Antitoxin Mixture 0.1 L + (Goat)—Cutter.

Lederle Laboratories, Inc.
- Solution Liver Extract Parenteral (Lederle) Refined and Concentrated.

Eli Lilly & Company
- Merthiolate Ophthalmic Ointment 1:5000
- Tincture Merthiolate 1:1000

H. K. Mulford Company
- Pneumococcus Antibody Globulin Type I—Mulford

National Drug Company
- Diphtheria Toxoid, one vial package
- Pollen Antigens—National, one 5 c.c. vial package
- Pollen Antigens—National, four 1 c.c. syringe packages
- Pollen Antigens—National, sixteen 1 c.c. syringe packages
- Schick Test (Peptone Diluent)
- Von Pirquet Test for Tuberculosis

NEW AND NON-OFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Diphtheria Toxin for Schick Test Diluted Ready for Use—Lilly.—A diphtheria toxin (New and Non-official Remedies, 1931, p. 383), diluted with physiological solution of sodium chloride containing 0.1 per cent gelatin and having a pH of 7.8 to 8.0. It is marketed in packages of one vial containing sufficient for ten tests, and in one vial containing sufficient for 100 tests. Eli Lilly & Co., Indianapolis.

Normal Horse Serum (1:10 Dilution) for the Conjunctival Test.—Normal horse serum (New and Non-official Remedies, 1931, p. 346), 1 part, diluted with physiological solution of sodium chloride, nine parts. Marketed in packages of one vial with dropper outfit. Lederle Laboratories, Inc., Pearl River, N. Y.

Book Announcements

Psyllium Seed: The Latest Laxative. A Scientific Treatise. By DR. J. F. MONTAGUE, Medical Director, Montague Hospital for Intestinal Ailments; Late of University and Bellevue Hospital Medical College, etc. Montague Hospital for Intestinal Ailments. New York City. 1932. Octavo of 170 pages. 20 illustrations. Cloth.

The Technique of the Non-Padded Plaster Cast. By FRITZ SCHNEK, M. D., First Assistant at the Accident Insurance Hospital in Vienna. With a Preface by LORENZ BOHLER, M. D., Director of the Accident Insurance Hospital in Vienna. Authorized English Translation by Douglas D. Toffelmier, M. D., Oakland, California. Member of the Orthopedic Staff of the Mevitt Hospital. Vienna. (Austria) Wilhelm Maudrich. 1932. Octavo of 140 pages. 169 illustrations. Cloth. Price, $5.00, post free.

Papers on Surgery and Other Subjects. By GEORGE TULLY VAUGHAN, M. D., LL. D., F. A. C. S., Professor, Chief of Surgery, Georgetown University; Chief Surgeon Georgetown University Hospital; Consulting Surgeon U. S. Veterans Bureau Diagnostic Centre; former Assistant Surgeon General U. S. Public Health and Marine Hospital Service; Commander M. C., Reserve Force U. S. Navy; Chief Surgeon, U. S. Transport "*Leviathan*" during the World War, etc. W. F. Roberts Company. Washington, D. C. 1932. Octavo of 408-ix pages. Illustrated. Cloth.

Desdemona Hawkins. The White Rat of Hawkins Hall. By ALICE MARY KIMBALL and MARY ALDEN HOPKINS. 1932. Evaporated Milk Association, 203 N. Wabash Avenue, Chicago. Pamphlet of 47 pages. Illustrated. Copies will be sent upon request.

Modern General Anesthesia. A Practical Handbook. By JAMES G. POE, M. D., Lecturer on General Anesthesia in the Medical and Dental Departments of Baylor University; Anesthesiologist of Baylor University Hospital of Dallas, etc. Second Edition, completely revised and enlarged. Philadelphia. F. A. Davis Company. 1932. Octavo of 231 pages. With 12 illustrations and 2 charts. Cloth. Price, $2.50.

Growth and Development of the Child. Part III. **Nutrition.** Report of the Committee on Growth and Development. Kenneth D. Blackfan, M. D., Chairman, White House Conference on Child Health and Protection. The Century Company. New York. 1932. Octavo of 532 pages. Cloth. Price, $4.00.

Obstetric Education. Report of the Subcommittee on Obstetric Teaching and Education. Fred Lyman Adair, M. D., Chairman, White House Conference on Child Health and Protection. The Century Company. New York, 1932. Octavo of 302 pages. Cloth. Price, $3.00.

Nutrition Service in the Field. Report of the Subcommittee on Nutrition. Lucy H. Gillett, Chairman, White House Conference on Child Health and Protection. Octavo of 139 pages. **Child Health Centers: A Survey.** Report of the Sub-committee on Health Centers. J. H. Mason Knox, Jr., Chairman. Lillian Laser Strauss, Vice-Chairman. White House Conference on Child Health and Protection. Octavo of 57 pages. The Century Company, New York. 1932. Bound in one volume. Price, $2.00.

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Editorial

An Announcement: Dr. Maxwell E. Lapham.

It is an important announcement to the medical practitioners of this State to say that Dr. Maxwell E. Lapham has been selected as Clinical Instructor in Prenatal and Postnatal work which is to be conducted under the sponsorship of the Medical Society of Virginia. This appointment has just been made and the announcement is made forthwith through this official publication of the Society.

Dr. Lapham, aged 32, graduated in medicine in 1925 at the University of Pennsylvania. He served two years in rotating internship at the Presbyterian Hospital; spent five months in medical practice in Labrador; served as resident obstetrician at University of Pennsylvania Hospital and as instructor in obstetrics at the University of Pennsylvania. Credentials of this sort give strong promise of the adequate preparation of the appointee for this important new work in Virginia—a work that carries the "gospel" of scientific knowledge to the busy workman in the field of obstetrics.

It would appear that the practitioners, availing themselves of this new agency of the Society in post-graduate work, will be highly fortunate in having at their command a man so well qualified and equipped in this field of medicine. It is hoped that this new service in review, instruction and clinical demonstration will be fully utilized by busy practitioners in their endeavor to carry to the women of Virginia a high state of efficiency in obstetrical services.

This announcement and comment should not be brought to conclusion without saying that the successful operation of this new work of Clinical Instruction to the Post-Graduate doctor of Virginia will meet the ardent purposes of a former president of the Medical Society of Virginia, Dr. J. Allison Hodges, who has labored in and out of season in an effort to bring about this new and important work in this State.

Considerations of Calcium Metabolism.

Inorganic salts form an essential element in body composition and maintenance. When the body is "returned to dust" by decay, or by incineration there remains the ash: "The coffins were broken open; the *ashes* were scattered to the four winds" or "even in our *ashes* live their wonted fires."

Physiologists compute the average amount of ash in the body to be about 4.3 to 4.4 per cent of body weight. Soft tissues, like muscle, it is estimated form only about 0.6 to 0.8 per cent, but the bone or skeleton structure, in the adult, comprises about 5/6 or most of the ash in the body. Inorganic salts or ash of the body consist of salts of potassium, sodium, calcium, magnesium, and iron; and also iodin occurring in thyroid tissue. In the liquid system of the body the chief salts are sodium chlorid, sodium carbonate, sodium phosphate, potassium and calcium chlorid or phosphate. These maintain such composition of the body fluids as is needed in osmotic interchanges between channels and tissue cells, in regulation of acid base equili-

brium, and in furnishing an essential part in the composition of living matter.

In the living molecule, in the proteins of the body, in the factor of blood coagulation, in the rhythmical contractions of the heart muscle, in the permeability of the capillary wall and other membranes, in the hemoglobin, in the large and important skeletal frame, and in other ways, the ash effects are to be observed in the support, maintenance, and duration of body-life.

It is quite apparent that diet or food should be adequately supplied through the life of the animal in the matter of carbohydrates, proteins, and fats and that water and vitamins are likewise necessary to the support of the body-strength and resistance against disease. But it is probably true, that as yet, not enough has been brought out in regard to the adequate maintenance of ash-adequate-diets in the young and adult human. If the status of bone disease and especially tooth decay in the human race today is to be taken as an index of this system of the body, where so high a percentage of ash (calcium) is necessary in its structure, and function, then it is quite probable that ash-poor diets prevail too much.

Calcium salts, especially, need emphasis. They play an important part in irritability of muscle and nerve; they furnish a material part in growth and maintenance of the osseous system. Calcium and phosphorus are companions in bone formation. In the blood, normally, there should be about 10 mgms. of calcium and 5 mgms. of phosphorus per 100 c.c. of blood to maintain a physiologic bone growth and function.

The parathyroid gland in an especial way is concerned in calcium metabolism and calcium elimination in the urine and feces is regulated or controlled by the hormone therein generated. A decrease, a normal, or an increased calcium content in the blood is by this gland decidedly influenced. In states of ash-poor-dietary, particularly calcium, wherein a low calcium is found, methods for increasing calcium absorption and for bringing up and sustaining an adequate blood calcium, play an important part in body growth, in bone disease, and in other essential health factors. In such state of low calcium, Victor C. Leonie* has pointed out four methods for raising the blood calcium to normal level and also for preventing loss of calcium through the large intestines. This author emphasizes what is well recognized now by other clinicians: (1) the use of ultra-violet rays or ordinary sunshine; (2) the administration of anti-rachitic vitamin (cod liver oil—irradiated ergosterol and irradiated foods); (3) the use of Collip's parahormone; and (4) the use of such acids as hydrochloric acid, or compounds metabolizing like it, such as ammonium chloride and calcium chloride. It is generally understood now that ultra-violet or sunshine acting on the ergosterol in the skin raises the gastro-intestinal acidity, increases the absorption and retention of calcium and phosphorus. Thus the action of cure in rickets is brought about.

Besides in a review of the subject in an editorial of the *Journal of the American Medical Association*,† the editor points out important considerations of nutrition in pregnancy. In this, one has attention drawn clearly to the importance of the growing fetus in the matter of adequate nutrition of the mother. In pregnancy, the source of the supply of calcium and phosphorus must be the mother's blood and the growing baby must rely upon the vitamin quality of the mother's milk. The role of calcification of the osseous structure of the fetus and new born and growing baby is definitely related to the blood calcium and the endocrine control of this ash elaboration in the body. "Bone, we are further reminded," says the editor, "is not a fixed product but an active ever-changing tissue, the formation of which is regulated by a complexity of interrelated factors normally acting with precise coordination." Thus the practitioner is apprised of the extremely important domain in obstetrics and the newborn of calcium metabolism.

Barker* has recently brought out matters that relate to this subject in dental caries in the rachitic young and in the adult. Attention was drawn to the work, especially of Mellanby, among others, depicting the influence of dietary poor in vitamin D. It seems probable, says the clinician, that the external and internal hypoplasias of the permanent teeth have their origin in defective calcifying process during the first and second years of life. Such faults of dentition may be forestalled by providing at this period a plentiful supply of vitamin D in the food. Secondary caries, it

*Quoted by General Therapeutics, Fantus, 1931, page 141.

†Journal American Medical Association, March 26, 1932, page 1088.

*Barker. Paper read before the Cleveland Dental Society and the Cleveland Academy of Medicine, January 5, 1931.

is felt, may be prevented by energetic use of anti-rachitic diet as before suggested. So the pregnant woman should ingest an abundance of foods rich in vitamin D, such as egg yolk, whole milk, and leafy vegetables. For the safety and development of permanent teeth, children should, especially in the first and second years, receive plenty of vitamin D (cod liver oil and ergosterol), and exposure to sunshine. Throughout young life and adolescence and besides later adult life, whole milk, eggs, green vegetables, orange juice, should have an important place in the diet.

Sunlight in Health and Disease.

Ultra-violet radiation has an accepted place in modern therapy. It has proved to be valuable in the prevention and cure of rickets, in surgical tuberculosis and certain skin diseases. Sunlight must have a place in the well being of the body, in its physiologic action and in its resistance to the inroads of disease. While it is known that animals and human beings have lived in coal mines, in dark enclosures, and covered with dark and forbidding clothing for long periods of time, it is no great stretch of reasoning to hold that such an environment in the absence of sunlight makes for deficiency of physical perfection and bodily strength. In recent times, however, under the influence of this accepted therapeutic use of ultra-violet energy in disease and health, there has been an exaggerated use of the idea by the lay public. This has been observed in the widespread effort at affecting a dark tanning of the body by exposure to sunlight especially on bathing beaches. The overuse of a wholesome measure by faddists and uninformed people to the point of producing harm and injury to the body would seem to make a brief reference to this popular practice on the part of the laity appropriate, especially now the summer season is approaching. Physicians may find a careful consideration of this subject by Coblentz* who discusses ultra-violet radiation, useful for therapeutic purposes, in a recent publication:

1. Untanned moist skin in summer requires an exposure of only about one-half to two-thirds as long as in winter (skin dry) in order to produce a minimum perceptible erythema; mid-day mid-latitude, sea level ultra-violet in summer sunlight, having an intensity of from 80 to 90 microwatts per square centimeter produced a minimum perceptible erythema in from twenty to forty-five minutes.

2. Heliotherapists obtain best results by exposing their patients in the forenoon or afternoon in summer and at noon in winter.

3. Effective healing of rickets, especially in children, as distinguished from rats and chicks, is gotten under solarium windows of a high transparency to short wave length ultra-violet radiation; exposures covering several hours each day and continuing for two months or more.

4. Human infants, partly dressed, leaving the head, neck and a greater part of the extremities free for exposure, exposing alternately front and back, in one hour intervals for twelve hours daily, to an average illumination intensity of 75 foot candles of tungsten filament radiations, produced by a 500 watt Mazda CX lamp, in an aluminum reflector, situated at a distance of 5½ feet above the level of the bed, show healing of rickets. This healing begins in from one and one-half to two weeks after starting the treatment, and complete healing occurs in nine to eleven and one-half weeks.

5. The exact influence of radiant energy on the health of healthy persons is not established. It is estimated as a result of studies on radiation of rickets, that a daily exposure to an intensity of from one-third to one-tenth of a curative dose should be sufficient to prevent; it is perhaps good practice to use 25 per cent of the minimum perceptible erythemal dose in planning ultra-violet ray installation for daily use.

From the foregoing abstracts, one may find some indications of the trend in this means of therapy. A reading of the author's full article will throw added light on more abstruse phases of dosage in artificial light therapy.

*J. A. M. A., March 26, 1932, page 1082.

You will find it less easy to uproot faults than to gain virtues. Do not think of your faults; still less of others' faults. In every person who comes near you, look for what is good and strong; honor that; rejoice in it; and as you can, try to imitate it, and your faults will drop off like dead leaves when their time comes.—*John Ruskin.*

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Speakers for Educational Meetings.

In response to the request of the officers and chairmen of program committees of many medical societies, members of the faculties of the Medical College of Virginia and the University of Virginia, sixty-one in number, have volunteered their services as clinicians and instructors for educational meetings. Each speaker is available for engagements which involve reasonable travel. Invitations for them to appear on programs should be made as far in advance as possible, either directly or through the officers of the Department, Dr. J. C. Flippin, Chairman, and Mr. George W. Eutsler, Executive Secretary, at University, Virginia.

The speakers and their subjects are as follows:

Medicine

Dr. T. N. Barnett:
1. Disease of Gastro-Intestinal Tract, especially Peptic Ulcer or Colon Condition.

Dr. S D. Blackford:
1. Tularemia.
2. Spontaneous Subarachnoid Hemorrhage.
3. Prognosis and Treatment of Lobar Pneumonia.

Dr. W. B. Blanton: (No subject given.)

Dr. W. E. Bray:
1. Clinical Laboratory Methods for Office Practice.
2. Tests for Pregnancy.
3. Simple Laboratory Aids in Nephritis.

Dr. W. E. Brown and Dr. F. B. Stafford:
1. Demonstration of the Proper Methods of Chest Examination.
2. Diagnosis of Pulmonary Tuberculosis.
3. Differential Diagnosis of Chronic Pulmonary Diseases, illustrated with lantern slides.
4. General Treatment of Pulmonary Tuberculosis.
5. Special Treatments of Pulmonary Tuberculosis (surgical and otherwise) illustrated with lantern slides.

Dr. J. B. Bullard:
1. Allergy.

Dr. D. C. Chapman:
1. Heart Disease.
2. Clinical Significance of Jaundice.
3. Vascular Disease of Extremities.

Dr. Dean Cole:
1. Some Phase of Chest Disease.

Dr. Dewey Davis:
1. Achylia Gastrica.
2. Peptic Ulcer.
3. Gastro-Intestinal Neurosis.
4. Subacute Bacterial Endocarditis.

Dr. A. D. Hart:
1. Etiology of Aortic Regurgitation.
2. Hypertension: Discussion of Management.
3. Digitalis in Treatment of Heart Disease.

Dr. W. H. Higgins:
1. Hypertension.
2. Peptic Ulcer.
3. Thyroid Diseases.

Dr. J. M. Hutcheson:
1. Cardiac Disease.
2. Cardio-Vascular Disease.

Dr. H R. Masters:
1. Encephalitis.

Dr. H. B. Mulholland:
1. Diabetes Mellitus.
2. Recent Advances in Diseases of the Blood.
3. Use of Diet in Disease.

Dr. Kinloch Nelson:
1. Heart Disease.
2. Pulmonary Tuberculosis.

Dr. R. A. Nichols, Jr.:
1. Trichomonas Vaginalis.

Dr. W. B. Porter:
1. Vascular Apparatus
2. Renal Disease.
3. Hematology.

Dr. F. W. Shaw:
1. Fungus Diseases: Etiology of the Disease from which the Organism was Isolated.

Dr. W. A. Shepherd:
1. Clinical Laboratory Diagnosis, Bacteriology, Histology and Pathology.

Dr. D. C. Smith:
1. The Diagnosis of Syphilis.
2. The Modern Treatment of Syphilis.
3. The Classification of Skin Diseases.

Dr. J. H. Smith: (No subject given.)

Dr. F. B. Stafford: (See Dr. W. E. Brown, above.)

Dr. O. Swineford, Jr.:
1. Allergy
2. Blood Diseases.

Dr. J. E. Wood, Jr.:
1. Cardiac Arrhythmias and Their Treatment.
2. Treatment of Congestive Heart Failure.
3. Management of High Blood Pressure.
4. Treatment of Angina Pectoris.
5. Management of Acute Nephritis.

Neurology and Psychiatry

Dr. Finley Gayle:
1. Crime from the Standpoint of a Psychiatrist.

Dr. Asa Shield:
1. Neurological Disorders.

Dr. D. C. Wilson:
1. The Early Diagnosis of Mental Disease.
2. Methods of Distinguishing Hysterical from Organic Disorders.
3. An Adequate But Simple Method of Neurological Examination for Office Practice.
4. A Review of the Commoner Neurological Conditions.
5. A Review of Present Day Attitudes in Psychiatry.

Obstetrics

Dr. Greer Baughman:
1. Prenatal Care.

Dr. J. M. Nokes:
1. Leucorrhea.
2. Hemorrhage in Obstetrics.
3. Sterility and Contraception.

Dr. H. H. Ware, Jr.:
1. Obstetrics.

Dr. T. J. Williams:
1. Vaginitis.
2. Backache in Gynecology.
3. Toxemias of Pregnancy.

Otolaryngology and Ophthalmology

Dr. E. W. Burton:
1. Squint in Childhood.
2. Intra-Ocular Foreign Bodies.

Dr. H. S. Hedges:
1. Early Diagnosis of Glaucoma.
2. Care of School Children's Eyes.

Dr. C. M. Miller:
1. Ophthalmology and Otolaryngology, particularly Conditions Bearing on Relation of Sinuses to General Diseases and Diseases of Eye and Orbit.

Dr. C. Tunstall:
1. Diagnosis and Treatment of Mastoiditis.

Dr. F. D. Woodward:
1. Foreign Bodies in Air and Food Passages.
2. The Present Status of Sinusitis.
3. Deafness.

Pediatrics

Dr. St. George Grinnan:
1. Respiratory Infections.
2. Summer Diarrhoea.
3. The Pathology of Vitamin Deficiencies.

Dr. T. D. Jones:
1. Infant Feeding.
2. Summer Diarrhoea.
3. Infantile Paralysis.

Dr. W. A. McGee:
1. Early Diagnosis and Treatment of Pertussis.
2. Rectal Ether Treatment of Pertussis.
3. Value of Isolation of Bordet-Gengou Bacillus in Making Early Diagnosis of Pertussis.
4. Acute Epidemic Tracheitis.
5. Pyuria in Infancy and Childhood.
6. Value of Schilling Differential Blood Count in Diseases of Infancy and Childhood.

Dr. L. T. Royster:
1. Acute Gastro-Intestinal Disturbances in Young Children.
2. Infant Feeding.
3. Acute Nephritis.

Dr. Henry Stern:
1. Infant Feeding.
2. Infectious Diseases.
3. Anemias in Childhood.

Dr. J. B. Stone:
1. Pediatrics.

Dr. W. W. Waddell:
1. Childhood Tuberculosis.

Public Health

Dr. K. F. Maxcy:
1. Diphtheria Immunization.
2. Scarlet Fever: Present Status of Serum Treatment and Immunization.
3. Typhus and Rocky Mountain Spotted Fever in Virginia: Diagnosis.

Dr. F. J. Wampler:
1. Relation of Diet to Health.
2. Medical Conditions in India, with moving picture (20-minute reel).

Surgery

Dr. I. A. Bigger:
1. Burns.
2. Infection of Hands and Forearm.
3. Diagnosis and Treatment of Lung Abscess.
4. Intestinal Obstruction.

Dr. C. C. Coleman:
1. Head Injuries.
2. Brain Tumors.
3. Spinal Cord Tumors and Injuries.
4. Inflammatory Diseases of the Brain and Central Nervous System.

Dr. E. C. Drash:
1. Surgical Treatment of Tuberculosis.
2. Treatment of Empyema.

Dr. W. H. Goodwin:
1. Problems of Pyogenic Osteomyelitis.
2. Lesions of the Mammary Gland.
3. Pathological Processes of the Cervix Uteri.

Dr. W. T. Graham:
1. Fractures.
2. Congenital Dislocations of the Hip.
3. Anterior Poliomyelitis.
4. Tuberculosis of the Bones and Joints.

Dr. F. S. Johns:
1. Factors that Influence the Mortality in Acute Abdomen.

Dr. E. P. Lehman:
1. Surgery of the Sympathetic.
2. Surgery of the Thyroid.
3. Vascular Diseases of Extremities.

Dr. H. Page Mauck:
1. Orthopedic Surgery.
2. Industrial Surgery.

Dr. S. M. Michaux: (No subject given.)

Dr. C. B. Morton:
1. Gastric and Duodenal Ulcer—Principles of Treatment.
2. Chronic Duodenal Obstruction and Certain Other Causes of Gastric Stasis.
3. Hyperthyroidism.
4. Some Principles of Minor Surgery.

Dr. C. R. Robins:
1. Any gynecological subject.

Dr. E. H. Terrell:
1. Hemorrhoids.
2. Ano-Rectal Fistulae, and Infections.
3. Etiology and Pathology of the Most Frequent Ano-Rectal Disorders.

Dr. Carrington Williams:
1. Surgical Aspects of Gastro-Intestinal Diseases.

Urology

Dr. R. C. Bryan:
1. Genito-Urinary Tract.

Dr. J. H. Neff:
1. Chronic Pyuria in Infants and Children.
2. Carcinoma of Prostate.
3. Mimicry of Cystitis.

X-Ray

Dr. V. W. Archer:
1. X-Ray Diagnosis of Malignant Disease.

Proceedings of Societies

Russell County Medical Society.

The annual election of officers was held during the called meeting in March, 1932, at which time the following were elected for the ensuing year: Dr. T. G. Smith, Lebanon, R. D., President, and Dr. W. C. Elliott, Lebanon, Secretary-Treasurer.

Dr. S. C. Couch, the retiring secretary, read the proposition offered by the Board of Health concerning the Toxin-Antitoxin Immunization. It was decided, after much discussion, that since the Board of Health had recently completed a series of Toxin-Antitoxin clinics over the entire County, it would not be profitable to hold pay clinics at this time.

It was decided to hold three meetings annually; the time and program for these meetings to be arranged by the president and secretary.

W. C. Elliott, *Secretary.*

The Northampton County Medical Society

Met at the Eastville Inn, Eastville, Va., April 7th, for their annual banquet.

Dr. F. D. Wilson, of Norfolk, Va., and Dr. B. B. Bagby, of Richmond, Va., were guest speakers. Together they outlined the suggested health program of the preschool and the early school child.

Facts were brought out to show that 25 per cent of children starting to school were un't for the work because of physical defects. A large percentage of repeaters in grades and failures in grades are due to physical handicaps which should be corrected. The cost to the State is reflected to the taxpayer.

The State Department of Child Hygiene suggests to parents that they have their family doctor examine children regularly so that defects may be corrected and certain diseases may be prevented. The cost of the examination will be much less than the loss due to sickness and failures. The doctors present agreed that they were glad to do the examinations, even to do so free where the parents were unable to pay the small amount usually charged.

Dr. H. L. Denoon, Nassawadox, is president of this Society.

W. C. Henderson, *Secretary.*

Roanoke Academy of Medicine.

Our second hospital meeting for the year was held at the Lewis-Gale Hospital, April 4, 1932 at 8:30 P. M. The program was in charge of the Hospital Staff, who presented the following program:

Schilling Count—Dr. K. D. Graves.
Coronary Disease in Diabetes: Case Report—Dr. C. D. Nofsinger.
X-Ray Therapy—Dr. J. T. McKinney.
Hemarthrosis of the Knee Joint—Dr. M. A. Johnson.
Trans-Urethral Resection of the Prostate—Dr. S. Beverly Cary.

The program was followed by an informal social hour.

Dr. William C. Stephenson, Jr., was elected to membership in the Academy.

The next hospital meeting will be held at the Roanoke Hospital on Monday, April 18th, at 8:30 P. M. C. H. Peterson, *Secretary.*

Norfolk's All-Day Clinic.

The All-Day Post-Graduate Clinic by the Norfolk County Medical Society on March 30th, was a great success. This was participated in by about thirty members of the local society and was attended by about sixty physicians from out of town in addition to a large number of local doctors. One hundred and eight of these attended the luncheon at Norfolk Protestant Hospital, following the morning clinics there. The afternoon clinics were held at St. Vincent's Hospital and these were followed by supper at the Norfolk Country Club at 6 o'clock. There were one hundred and thirty-six present for this occasion. At 8:00 P. M., Dr. D. L. Borden, professor of surgery at George Washington University School of Medicine, Washington, D. C., gave a talk on "Some Unusual Intra-Abdominal Lesions," which was illustrated by moving pictures. This meeting had an excellent attendance.

The papers, illustrations and other demonstrations were very instructive and those present seemed to feel that the Clinic was a great success and well repaid them for their efforts in attending. The committee arranging the clinics was composed of Dr. Julian L. Rawls, chairman, and Drs. A. Brownley Hodges and Robert DuVal Jones, Jr.

News Notes

Richmond Meeting, Medical Society of Virginia.

The first week in November has been set for the annual meeting of the State Medical Society.

Dr. R. Finley Gayle, Jr., President of the Richmond Academy of Medicine, announces the appointment of the various heads of committees as follows:

*General Chairman*_____Doctor Powell Williams
*Vice-chairman and Secretary*___Doctor D. C. Ashton
*Publicity*_____Doctor W. Randolph Graham
*Golf*_____Doctor Thomas W. Murrell
*Finance*_____Doctor Emanuel Wallerstein
*Entertainment*_____Doctor Asa Shield
*Scientific Exhibits*_____Doctor W. Ambrose McGee
*Commercial Exhibits*_____Doctor C M. Caravati
*Hotels and Meeting Halls*_____Doctor Hudnall Ware
*Ladies*_____Mrs. E. L. Sutton
*Automobiles and Reception*_Doctor James H. Royster

Lay your plans now to attend this convocation which bids fair to be one of our greatest.

Watch your State journal as well as local and State newspapers for more detailed announcements.

Change in Date of Meeting.

Because May 21st conflicts with the meetings of other important societies, the Virginia Society of Oto-Laryngology and Ophthalmology announces that it has changed its date of meeting from the one previously given *to May the 14th.* The place of meeting will be the Cavalier Hotel, Virginia Beach, as previously stated. Dr. Clarence Porter Jones, Newport News, is president, and Dr. H. Grant Preston, Harrisonburg, secretary-treasurer.

The New Orleans Meeting of the A. M. A.

The American Medical Association is to meet in New Orleans, May 9th-13th, for the fifth time in its history. Not only does this meeting promise much of interest in a scientific way, but also socially. New Orleans is perhaps one of the most fascinating and interesting cities in our country and anyone should feel well repaid for visiting it under such auspicious circumstances. A large number of reservations seem to indicate a record attendance. Railroad tickets may be secured on the certificate plan for a one and a half fare for the round trip. These tickets may be bought from May 5th to 11th, inclusive.

Dr. E. Starr Judd, Rochester, Minn., is this year's president and Dr. E. H. Cary, Dallas, Texas, president-elect. Virginia's representatives in the House of Delegates will be Drs. Southgate Leigh and E. C. S. Taliaferro, of Norfolk, and Dr. Warren F. Draper, Richmond, alternate for Dr. J. W. Preston.

American Medical Golfers Play in New Orleans, May 9th.

The American Medical Golfing Association will hold its Eighteenth Annual Tournament in New Orleans on Monday, May 9, 1932. The thirty-six hole match will be played over the beautiful and interesting New Orleans Country Club course, followed in the evening by the golfers' banquet and distribution of prizes. Approximately fifty trophies and prizes will be distributed to winners in the various events.

The membership of the A. M. G. A. now totals 850 physicians, representing every state in the union. Any male fellow of the American Medical Association in good standing is eligible to membership in the Golfing Association. Applications may be procured by writing Bill Burns, Executive Secretary, 4421 Woodward Avenue, Detroit, Mich.

Mother's Day, 1932.

Mother's Day, to be celebrated this year on Sunday, May 8th, will be devoted not only to filiat attentions through letters, visits, candy, and flowers, but also to an intensive nationwide campaign to reduce the excessively high death rate of mothers in childbirth. Authorities maintain that of the 16,000 mothers who die annually from this cause 10,000 might be saved through adequate maternity care. The Maternity Center Association, with its headquarters at 1 East 57th Stret, New York City, reports that plans for the campaign are taking concrete form among women's clubs, church and civic organizations, health departments, medical societies, and nursing groups. It is reported that in a similar campaign last year as many men as women became interested, and this year special efforts will be made to awaken prospective fathers to the fact that to have a well baby and a healthy mother, more is required than simply to "let nature take its course." The Maternity Center Association

states that it will be glad to help local organizations everywhere to improve community conditions by supplying, free of charge, material for speeches, programs for clubs and church services, and other campaign aids.

Tri-State Hospital Conference.

The Tri-State Hospital Conference, comprising the hospital associations of Virginia, North Carolnia and South Carolina, will be in annual session at the Jefferson Hotel, Richmond, Va., May 17th-19th.

The session will open with a public meeting on Tuesday night, May 17th, at 8 o'clock, addressed by distinguished speakers. The next day there will be a technical program in the morning and in the afternoon, followed by a banquet and dance that night. The banquet is scheduled for 7:00 P. M. On Thursday from 9:00 to 11:00 there will be a general session followed by separate meetings for business purposes on the part of the three hospital associations making up the conference.

With papers limited to fifteen minutes and discussions to five minutes each it will be possible to cover a wide range of topics during the course of the conference. Each of the three states directly concerned will contribute speakers, and others from distant states will also participate.

Hospital superintendents, members of the nursing and medical staffs, and the boards of trustees, as well as interested members of the general public, are invited to attend the conference. Approximately five hundred delegates are expected to register.

The committee on arrangements is composed of Dr. W. T. Sanger, Mr. Haskins Coleman, secretary of the Virginia Hospital Associaton, and Dr. John Bell Williams, all of Richmond; Dr. R. H. Fuller, South Boston, Va., and the following, who are presidents of their respective State Hospital Associations; Dr. Knowlton T. Redfield, Roanoke, Va.; Dr. Harold Glascock, Raleigh, N. C., and Mr. F. O. Bates, Charleston, S. C.

Clinic Tour Prices Reduced.

Recent drastic reductions in steamship rates will make even more attractive the already low prices of our Cooperative Clinic Tours this year. The prices allowing Tourist Class on the ocean have been reduced by $47.50 and those providing First Class on the ocean have been reduced by $130!

Unquestionably these rates—especially those for First Class—are too good to last. It is our opinion that it will be impossible, with the high grade of service maintained by the North German Lloyd, especially on the *Europa* and the *Bremen*,—the two ships to be used—to continue on the basis of the present prices and there are already rumors of a revision upward in the near future.

In the meantime, however, our tours may be bought at the current bargain rates. The wise ones know that these days of the great "repression" constitute an unprecedented opportunity to travel at minimum cost. Collections are bad anyhow. Why not take advantage of the present situation and go with us this summer? There are three of these tours. One sails from New York on June 7th and the other two on July 19th. Work up a congenial party at once.

Inquiries sent the office of the VIRGINIA MEDICAL MONTHLY will have prompt attention.

Medical College of Virginia News.

Plans are being made for the post-graduate clinic for Negro physicians to be held at St. Philip Hospital during the early summer. The special clinic will begin June 20th, and will continue for a period of two weeks. The marked success of the course offered last year leads us to believe that the classes should be continued this year. All of the courses will be given by the members of the faculty of the college and the course will vary sufficiently from last year's course to justify the same doctors in registering.

Dr. Harry Bear, dean of the school of dentistry, Dr. A. O. James, Dr. M. G. Swenson, Dr. J. C. Forbes, Dr. P. L. Chevalier and Dr. S. F. Bradel attended the annual meeting of the American Association of Dental Schools at Ohio State University, Columbus, the latter part of March.

Dr. Sidney S. Negus, professor of chemistry, and Mr. Robert F. McCrackan, associate professor of Chemistry, attended the spring meeting of the American Chemical Society in New Orleans the last week in March.

Distinguished visitors at the college during the last few weeks were: Dr. John R. Minehart, dean of the school of pharmacy, Temple University, Philadelphia; Dr. Walter M. Simp-

son, director of the diagnostic laboratory, Miami Valley Hospital, Dayton, Ohio; Dr. Frank L. Babbott, Jr., dean of the school of medicine, Long Island College of Medicine, Brooklyn, New York, and Dr. Edgar D. Congdon, who has recently returned from work for the Rockefeller Foundation in Peking and Bangkok.

Final plans are being made for the Tri-State Hospital conference, which will meet at the Jefferson Hotel, Richmond, Va., May 17, 18 and 19, 1932. The committee working on this program includes F. O. Bates, president of the South Carolina Hospital Association; Dr. Knowlton T. Redfield, president of the Virginia Hospital Association; Dr. Harold Glascock, president of the North Carolina Hospital Association, and Dr. W. T. Sanger, president of the Medical College of Virginia. Others on the committee are Dr. John Bell Williams, of Richmond; Dr. R. H. Fuller, of South Boston, and Mr. Haskins Coleman, of Richmond.

The senior pharmacy students of the college, accompanied by Dr. Rolland J. Main, visited several large pharmaceutical houses in Philadelphia during the early part of April. This is a yearly visit by the members of each of the senior classes.

Both the social service and the dental departments of the college have had a busy month during March. In the out-patient department more than seven hundred cases were investigated and handled, and in the dental infirmary there were two thousand patient visits made during the month, which was the busiest since this service was first inaugurated.

The college expects to graduate one hundred and sixty students from its several schools this year. The commencement sermon will be given by Dr. Frederick W. Burnham, pastor of the Seventh Street Christian Church, at 8:00 o'clock on the evening of May 29th. On the preceding night the dramatic club will present a play—*Marrying Anne.* On Monday, May 30th, the alumni will have their various functions, the day to be concluded with a dinner at the Commonwealth Club with Dr. James M. Northington, president of the alumni association, presiding. The diplomas will be presented to the graduating class at public exercises in the Mosque Theatre at 3:00 o'clock on the afternoon of May 31st. Dr. William D. Cutter, Secretary of the American Medical Association Council on Medical Education and Hospitals will be the commencement speaker.

Mr. J. R. McCauley, secretary of the College, represented the institution at the alumni dinner held during the recent meeting of the North Carolina State Medical Society.

News Notes from University of Virginia, Department of Medicine.

On March 26th, Dr. H. E. Jordan attended the annual meeting of the Executive Committee of the Commission on Standardization of Biological Stains at the Medical Center, Columbia University.

At the meeting of the University of Virginia Medical Society on March 28th, Dr. W. H. Pearson, of Norfolk, Va., spoke on the subject of Orthodontia.

At the meetings of the American Association of Anatomists in New York City from March 24th to 26th, Dr. H. E. Jordan read a paper on The Lymphocytes of the Urodele, Proteus anguineus; Dr. C. C. Speidel on Nerve Regeneration and Readjustment as Revealed by Prolonged Observation of Individual Fibers in Living Frog Tadpoles; Dr. J. E. Kindred on A Study of the Tinctorial Reactions of Hemoglobiniferous Cells, Russell Bodies, Plasma Cells, and Lymphoctyes of the Albino Rat by a New Method of Selective Staining.

On April 7th, Dr. C. C. Speidel spoke before the University of North Carolina Chapter of Sigma Xi on Growth and Activities of Living Nerves.

On April 8th, Dr. Kenneth Maxcy attended the meeting of the American Epidemiological Society in New York City.

Dr. Russell L. Cecil, Assistant Professor of Medicine in the Cornell University Medical College, gave the address on the occasion of the annual initiation to Alpha Omega Alpha on April 12th. Dr. Cecil spoke on The Treatment of Pneumonia.

Dr. A. N. Richards, professor of pharmacology at the University of Pennsylvania, visited the Medical School on April 13th.

Dr. and Mrs. Warren H. Lewis, of the department of embryology of the Carnegie Institution of Washington, D. C., spent the day of April 14th at the Medical School.

News Notes from the Duke University School of Medicine and Duke Hospital.

On April 8th, Dr. Ralph Pemberton, Associate Professor of Medicine, University of Pennsylvania, Philadelphia, and Chairman of the American Committee for the Control of Rheumatism, gave a clinic on Arthritis at the Duke Hospital.

On April 15th, Dr. Warren H. Lewis, of the department of embryology, Carnegie Institution of Washington, gave a clinic on Cancer at the Duke Hospital.

Dallas Southern Clinical Society.

Four years ago the local medical society of Dallas, Texas, started what is known as the Dallas Southern Clinical Society. It is organized along the lines of the International Post-Graduate Assembly. A week is devoted to lectures and to clinics. At noon each day there are luncheon round-table discussions. The clinics and lectures are held by men of prominence selected from the United States and sometimes from Canada.

The Society has grown into considerable influence and its registration includes men not only from Texas but from various regions of the South, a few from California and from Mexico.

Each of the honored guests gives at least one dry clinic and one lecture. In addition, he is a target for questions at the round-table discussions and luncheons.

The meeting this year was held in Dallas from March 28th to April 2nd, inclusive, and was well attended and very stimulating. The honored guests included Dr. J. Shelton Horsley, of Richmond. Dr. Horsley attended the meeting for three days, during which time he delivered two lectures, conducted two dry clinics, and led three round-table discussions.

The other honored guests were Dr. Thomas R. Brown of Baltimore, Dr. Frank H. Lahey, of Boston, Dr. Karl A. Menninger, of Topeka, Dr. Herman L. Kretschmer, of Philadelphia, Dr. Samuel A. Leving, of Boston, Dr. Merrill C. Sosman, of Boston, Dr. W. McKim Marriott, of St. Louis, Dr. Lee Wallace Dean, of St. Louis, Dr. Udo J. Wile, of Ann Arbor, Dr. William O'Neill Sherman, of Pittsburgh, Dr. Paul Titus, of Pittsburgh, Dr. Carl A. Hedblom, of Chicago, Dr. William L. Benedict, of Rochester, Minn., Dr. Edward R. Richardson, of Baltimore, Dr. John A. Kolmer, of Philadelphia, Dr. Joseph C. Beck, of Chicago, Dr. Albert H. Howe, of Oakland, Calif., and Dr. Dudley A. Smith, of San Francisco.

Dr. E. R. Moorman,

Of the class of '30, Medical College of Virginia, is now located at Kilmarnock, Va., where he is engaged in general practice. Dr. Moorman interned for the year after graduation at the City Memorial Hospital, Winston-Salem, N. C., following which he was resident physician at the Southside Community Hospital, Farmville, Va., until he located at Kilmarnock.

Annual Report of the National Society for the Prevention of Blindness.

One of the specific instances of progress, given in the Annual Report of the National Society for the Prevention of Blindness, is the further reduction of blindness from ophthalmia neonatorum, commonly known as "babies' sore eyes." In 1931, only 7.5 per cent of all new admissions to schools for blind had lost their sight from this cause as compared to 28 per cent in 1907. The Society is continuing its cooperation with the National Safety Council and the American Society of Safety Engineers for the prevention of industrial eye accidents. Studies indicate that there is a great need for more extended activities to reduce the loss of eyesight from firecrackers, air guns, scissors, etc. An unusually important project, undertaken during the past year in cooperation with the department of education of Columbia University, is a study to determine what effect reading actually has on the eyes.

The Society has continued the promotion of sight-saving classes for children with the result that during 1931, twenty-two additional classes were organized, bringing the total number in the United States to 398, located in 114 cities in twenty-three states. Sixty-eight teachers for sight-saving classes were enrolled in courses at several colleges. Also in the inter-

est of the eyesight of school children, the Society has participated in the revision of the Code for Lighting School Buildings. Activities in connection with the White House Conference on Child Health and Protection have been continued during the past year, and several local conferences have been held. During 1931, the Society gave 103 demonstrations of vision testing in forty-two cities, in nine states, before 6,789 school and public health nurses, teachers, doctors and social workers. In one state alone more than 8,000 preschool children had their vision tested.

"Medicine in Virginia in the 18th Century."

That "A prophet is not without honor, save in his own country" may well be applied to this most excellent history of medicine in our own State, as we are advised that the majority of orders for this volume have come from out of this State.

The two volumes on Medicine in Virginia which have already been published should have a place in every doctor's library because of their value and interest. As there is only a limited number to the edition named above, Virginia doctors who contemplate securing copies should place their orders at once, which may be done through the offices of this journal.

The material in these volumes has been compiled by Dr. Wyndham B. Blanton, as chairman of the Committee of the Medical Society of Virginia on History of Medicine in Virginia. It will be a matter of pride to those interested in this work to read the splendid notice given this history in the March 26th issue of the *Journal of the American Medical Association.*

Order your copy *NOW.*

Deaths of Physicians Published in 1931.

During 1931 there were 2,952 deaths of physicians in the United States as compared with 2,943 during 1930, according to the *Journal of the A. M. A.* The average age at death of those classified was 63.8 as compared with 63.7 for 1930. There were 139 physicians who died as a result of accidents as compared with 130 in the previous year. Automobile accidents accounted for seventy-one, five more than in 1930. Sixty-four physicians committed suicide in 1931, two less than in 1930. There were nine homicides caused by shooting and one by stabbing.

Heart disease was again the leading cause of death, with 1,065 deaths compared with 1,059 for 1930. Cerebral hemorrhage was the second most frequent cause reported, while pneumonia was the third most frequent cause. Fourth on the list was arteriosclerosis.

Hospital Lien Bill—A New Law.

At the recent session of the Virginia Legislature, a bill was presented "To create a lien in favor of hospitals for its reasonable charges for caring for persons injured in accidents, the giving of notice of such lien, the effect thereof and to provide for the adjudication of the claims made by hospitals against persons injured in accidents."

This Bill was sponsored by the Virginia Hospital Association and the Committee on Legislation and Public Health of the Medical Society of Virginia. After persistent effort on the part of representatives of these two bodies, the law was enacted by the General Assembly of Virginia and approved by the Governor on March 24, 1932.

Hospital authorities throughout the State should acquaint themselves with this law and what it may mean to them.

Dr. Ward C. Curtis,

Warrenton, Va., had the misfortune to lose most of his clothing, instruments, books and important papers in a fire which recently destroyed his sister's home, where he was keeping these things for a short time. Dr. Curtis is a graduate of the Medical College of Virginia in the class of '20, and was for a time connected with the medical staff of the Central State Hospital at Petersburg, Va.

Child Accidents Cause Blindness.

Almost one-tenth of all blindness in institutions is due to accidents in childhood, according to the National Society for the Prevention of Blindness. The society has undertaken a study of the types and causes of eye accidents in childhood and is also examining city ordinances concerning such outstanding causes as firecrackers, air rifles, and bean shooters. The facts will then be placed before the public and the State legislatures.

Dr. D. Hunter Marrow,

After spending the winter at Daytona Beach Fla., returned to his home in Boydton, Va. about the middle of April.

"The Next Step Toward Better Maternity Care."

This is the subject for discussion at a luncheon to be given on May the 5th in New York City, by Mrs. E. Marshall Field (vice-president) and the Board of Directors of the Maternity Center Association. The speakers on this occasion will be Dr. Thomas Parran, Jr., Commissioner of Health, State of New York; Dr. John A. Hartwell, President, New York Academy of Medicine; and Dr. Charles Gordon Heyd, President-elect, New York State Medical Society.

Dr. Howard R. Masters,

Richmond, Va., was elected president of the local chapter of the Randolph-Macon College Alumni Association, at the organization meeting held in this city, April 14th.

The Medical Society of the State of North Carolina

Held a record breaking meeting in Winston-Salem, the middle of April, under the presidency of Dr. M. L. Stevens, of Asheville. The registration mark neared 750. On the last night, Dr. John B. Wright, Raleigh, was installed as president for the coming year. Other officers are: Dr. I. H. Manning, Chapel Hill, president-elect; Dr. J. R. McCracken, Waynesville, and Dr. W. G. Suiter, Weldon, vice-presidents; and Dr. L. B. McBrayer, Southern Pines, re-elected, secretary-treasurer. It was decided to hold the 1933 meeting in Raleigh.

Dr. Staige D. Blackford,

University, Va., sailed about the middle of April, on the S. S. *Vulcania*, for a Mediterranean cruise.

Bank Directors.

Drs. E. G. Brumback and Loring Hammer, of Luray, Va., were elected directors of the First National Bank of that place, at a meeting held on March 31st.

Dr. J. Fulmer Bright,

For nearly eight years mayor of Richmond, Va., was renominated for this same office in the Democratic Primary in Richmond, early in April.

Merck to Have New Research Laboratory Building.

Ground was recently broken for the erection of a research laboratory building at the works of Merck & Co., Inc., at Rahway, N. J. The project has been under consideration for some time. George W. Merck, president of the Company, brought it to the attention of the stockholders a year ago. The directors have authorized proceeding with the work at this time, moved by the consideration that it will provide increased employment and that the facilities are urgently needed. The research activities of the Company are at present being carried on in various parts of the large Merck plant—in many cases in make-shift quarters.

The building will be a Colonial type, brick structure, with a central section 40 ft. by 80 ft., of two stories and basement. On each end of this central section will be two one-story wings, 50 ft. by 100 ft. The wings will be connected with the central section by two one-story units, 10 ft. by 38 ft.

The south and north wings will be devoted to carrying on special types of research work, while the central section will contain on the first floor the offices and private laboratories of the research directors and several other laboratory rooms. Here also will be located the library, which will be an outstanding feature of the building. The arrangement of the library will provide for work tables and complete files of technical literature from all over the world. The work of the librarian and abstractors will be carried on in adjacent locations. The Patent Department offices will also be located on the second floor. The basement will also be fully utilized.

Merck & Co., Inc.'s, decision to carry out such ambitious plan at this time adds another to the growing list of American chemical companies who have determined not to allow the period of depression to diminish their activities in research and technical endeavor.

Dr. Pauline Williams to Preside at National Convention.

Alpha Epsilon Iota Fraternity of medical women will hold its biennial convention at Portland, Ore., June 10th, 11th, 12th. The entertaining chapter, Xi, is located at the University of Oregon. Dr. Pauline Williams, of Richmond, national president, will preside at the meeting. She will be accompanied to Portland by her secretary, Miss Mary Elizabeth Johnston. The organization embraces a membership of 1,500 women physicians and women medical students; the chapters being established in twenty-two class A medical schools throughout the country.

Dr. Williams, who is a member of the class of '24, Medical College of Virginia, was among those elected to fellowship in the American College of Physicians on April 6th, during the annual convention of that organization in San Francisco. Her certificate was presented to her *in absentia.*

Changes for Medical Reserve Officers.

Major Robert R. Hoskins, Med-Res., Mathews, Va., is relieved from assignment to the 80th Division and is assigned to the 41st General Hospital, in capacity of Assistant Chief of Medical Service.

First Lieutenant Mallory S. Andrews, Med-Res., Norfolk, Va., has been assigned to the 41st General Hospital, in capacity of Surgical Ward Officer.

Dr. Frederick P. Barrow, Portsmouth, Va., has been promoted to First Lieutenant, Medical Corps, 111th Field Artillery.

Again Honored.

The British Medical Journal, London, contains the anouncement that at a meeting of the Council of the Royal College of Surgeons of England, Lord Moynihan, President, in the chair, The Right Hon. Lord Dawson of Penn, P.C., G.C., V.O., K.C.B., K.C.M.G., Physician to His Majesty the King, and President of the Royal College of Physicians of London, and Sir Henry Wellcome, LL.D., F.S.A., founder of the Wellcome Research Institution, were elected Honorary Fellows of the Royal College of Surgeons. This is one of the most exclusive scientific bodies in England, and the bestowal of this honor on Sir Henry Wellcome is very exceptional in that aside from members of the Royal Family, Sir Henry is the second person not holding a medical degree upon whom this rare distinction has been conferred, the first and only other recipient being the famous Field Marshall, Lord Roberts, of Kandahar.

Sir Henry Wellcome is of American birth and is well known for his world-wide scientific work and extensive pioneer researches in connection with tropical diseases.

The Annual Report of St. Elizabeth's Hospital,

Richmond, Va., for 1931 has just appeared. It shows 1,473 patients during the year 1931 in comparison with 1,302 patients in 1930. There were twenty-one deaths among the operative cases, three among the surgical non-operative cases, five among the urological cases, and thirteen among the medical cases, making the total number of deaths forty-two, and the mortality rate for all deaths 2.85 per cent, as compared with forty-five deaths in 1930 and a mortality rate of 3.46 per cent. The mortality rate for operative surgical patients for 1931 was 2.66 per cent as compared with 4.09 per cent for 1930.

Appended to the report and constituting an interesting feature of it is a synopsis of all deaths, including remarks upon the cases and a brief report of the necropsies. Seventeen necropsies were done (40.47 per cent) and of this number 66.23 per cent were upon surgical patients.

There were 1,158 anesthesias during 1931, of which there were eighty spinal, 429 local, fifty-eight straight ether, 229 straight ethylene, 303 ethylene combined with ether, local or avertin; and 286 operations in which avertin was used.

Dr. Alpheus H. Wood,

After a time at Catawba Sanatorium, Va., has returned to his home in Emporia, Va., where he will recuperate for a while, following a recent minor operation.

A True Auxiliary.

The Woman's Auxiliary to the Richmond Academy of Medicine is proving an Auxiliary in every sense of the word. In addition to the cooperation given along other lines, they recently requested the privilege of assisting the Academy of Medicine in furnishing two lounge rooms in their new Library building, now under construction, and to be opened this Fall. This offer was accepted by the doctors with thanks and the ladies will now make this work their main objective.

Child Marriages in New York.

Thirty-three girls only 14 years of age and 197 others of 15 years were married in New York State in 1930, according to a report recently issued by the New York State Department of Health. The youngest of the bridegrooms was 16, while forty-five others were under 20. The oldest bridegroom was 51 years of age. It seems to be commonly believed that most child marriages occur among the foreign population, but that is not true of this group. Only ten of the brides were of foreign birth, fifty-five of foreign parentage, and twelve of mixed parentage, so that only a third of them were not native born of native parentage. A

larger number of the husbands—forty-seven—were of foreign birth, but the total who were not native born of native parentage was considerably less than half.

Scheduled Meeting.

The regular scientific monthly meeting of the Faculty and Staff of the Medical College of Virginia will be held Thursday, May 19, 1932, at 8:15 P. M. in the auditorium of Cabaniss Hall.

The program will be as follows:

1. "Stab Wound of the Superior Vena Cava": Case Report—Dr. B. W. Wilkinson.
2. "A Report of Ten Cases of Mēniére's Disease Treated by Intracranial Section of the Auditory Nerve"—Dr. C. C. Coleman.
3. "The Use of Nupercaine in Exodontia with Experimental Toxicity Report."—Dr. R. J. Main and Dr. V. R. Trapozzano.

Philadelphia to Have a New Institute for Research.

According to the *Journal of the A. M. A.*, Philadelphia is to have a new institute for Medical Research. This will be open for work in the Fall and will be under the direction of Dr. Leonard G. Rowntree, now director of clinical investigation at the Mayo Clinic, Rochester, Minn., and also professor of Medicine at the University of Minnesota. It is stated that the Philadelphia Institute for Medical Research will center its activities in the Philadelphia General Hospital and will attempt to foster research through affiliation and collaboration with all medical institutions in that city.

Dr. Athey R. Lutz,

Of the class of '27, Medical College of Virginia, after finishing an eighteen months' fellowship at the Willis C. Campbell Orthopedic Clinic, Memphis, Tenn., has located at 1330 Third Avenue, Huntington, W. Va. He is connected with the staff of the Huntington Orthopedic Hospital and is limiting his practice to orthopedic surgery.

Industrial Health.

Dr. H. U. Stephenson, medical director of the Industrial Commission of Virginia gave a talk on "What Health Means in Efficient Conduct of Operations in Industry," at the April meeting of the Lynchburg Foremen's Club, on the evening of April the 11th. He stressed the fact that employees in industrial plants should be encouraged to realize that a healthy condition, physically and mentally, is a part of their contribution to safety and prevention of lost time and thereby adds to the efficiency which the employer has a right to expect.

Dr. White Honored.

Dr. Joseph A. White, Richmond, Va., was the guest of honor and speaker before a gathering of senior and junior students and members of the faculty of the Medical College of Virginia on the afternoon of April the 19th, this being Dr. White's eighty-fourth birthday anniversary. He was given a hearty reception and presented with flowers. Dr. White, who is a professor emeritus at the College, took as the subject of his address "Ophthalmology During My Lifetime."

Cook County Hospital Summer Clinics.

The regular Summer Clinics given by the Staff of Cook County Hospital under the auspices of the Chicago Medical Society will be held during the weeks of June 6th to June 18th, inclusive. The usual $10.00 registration fee will be charged to cover the expense of organization.

Applicants desiring to enroll for the Post-Graduate Clinics should make application as soon as possible to the Secretary of the Cook County Summer Clinics, care of the Chicago Medical Society, 185 North Wabash Avenue.

Dr. Albert B. Siewers,

Of the class of '18, Medical College of Virginia, spent the Easter vacation with his family in Richmond, Va. Dr. Siewers is assistant professor of Nervous and Mental Diseases in the Syracuse University, Medical School, Syracuse, N. Y., and is also psychiatrist to the Department of Education of Syracuse.

Child Health Day, 1932.

Although President Hoover proclaimed May 1st as Child Health Day, in Virginia this day is celebrated at any time from April to June, whenever the schools close for the session. This year, the slogan is "Support Your Community Child Health Program." The Bureau of Child Welfare of the State Department of Health, Richmond, Va., will be glad to offer suggestions for programs upon request.

Married.

Mr. Pierre Louis D'Halluin Bonte, New York City, and Miss Mary Stuart Harrison, daughter of Dr. and Mrs. I. C. Harrison, of Danville, Va., March 26th.

Dr. William Edward Fitch,

Recently medical director at French Lick Springs, French Lick, Ind., has located in Burlington, N. C., which is in his native county. He will be engaged in general practice. Dr. Fitch lived for some years in New York City where he served as an instructor in the School of Medicine at Fordham University. He came to Virginia several years ago and was for sometime medical director at Buffalo Lithia Springs, Va.

Dr. Thomas F. Gill,

Richmond, Va., announces his removal to his new home and offices at 2924 Chamberlayne Avenue, this city.

Dr. U. W. Massie,

Of the class of '30, Medical College of Virginia, announces his removal from Bluefield, W. Va., to Montvale, Va. Dr. Massie served his internship at Lewis-Gale Hospital, Roanoke, Va.

The American Association for the Study of Goiter

Announces a very interesting program of hospital and dry clinics, addresses and social features for its annual meeting to be held in Hamilton, Ontario, Canada, June 14th, 15th and 16th. Dr. M. O. Shivers, Colorado Springs, Col., is president, and Dr. J. R. Young, Terre Haute, Ind., secretary.

For Sale—

One office examining chair-table, complete with cushions. Very reasonably priced. Address answers to "No. 346," care this journal. (*Adv.*)

Hourly Nursing Service.

The Private Duty Nurses' Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

For information, dial 3-1656. (*Adv.*)

Wanted—

Good location in Virginia, by middle aged doctor. Address "G. S.," care this journal. (*Adv.*)

Obituary Record

Dr. John A. Tipton,

Prominent physician of southwestern Virginia, died at his home in Hillsville, Va., April 23rd, after a long period of ill health. Dr. Tipton graduated in medicine from Bellevue Hospital Medical College in 1879 and had been a member of the Medical Society of Virginia since 1885. His wife and two brothers survive him.

Dr. Thomas J. Stanley

Died April 14th, at his home in Beaver Dam, Va. He was sixty-seven years of age and graduated from the University of Maryland, School of Medicine, in 1889. Dr. Stanley had been a member of the Medical Society of Virginia for twenty-eight years. His wife and two children survive him.

Dr. Charles Bolton Brock

Died suddenly at his home in Richmond, Va., April 11th. He was the son of the late Dr. and Mrs. C. W. P. Brock and was sixty-two years of age. Dr. Brock graduated from the Medical College of Virginia in 1894. A brother survives him.

Dr. Alva Bernard Clark,

Richmond, Va., died March 27th, as the result of a streptococcic infection. He was thirty-four years of age and a native of Bramwell, W. Va. Dr. Clark graduated from the Medical College of Virginia in 1925 and served his internship at Grace Hospital, Richmond. At the time of his death he was one of the instructors in genito-urinary surgery at his alma mater.

Dr. James H. A. Loflan,

Melfa, Va., died February 29th. He was eighty-two years old and a graduate of the College of Physicians and Surgeons, Baltimore, in the class of '76. He was a member of the Accomack Medical Society.

Dr. Julius Sheppard Moore,

Arkadelphia, Ark., died January 27th, from injuries received in an automobile accident. He was fifty-one years of age and graduated from the University of Virginia, School of Medicine in 1909.

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PREVENTIVE AND THERAPEUTIC ASPECTS OF CENTRAL NERVOUS SYSTEM SYPHILIS IN GENERAL AND INSTITUTIONAL PRACTICE.*

DUDLEY C. SMITH, M. D.,

and

R. EARLE GLENDY, M. D.,

University, Va

From the Department of Dermatology and Syphilology, University of Virginia Hospital.

An enormous literature is available to show that neurosyphilis is very widespread and is one of the most frequent of all types of disorders of the nervous system. The frequency of neurosyphilis in general medical practice may be roughly estimated from the diagnostic work of the Mayo Clinic in which syphilis as a whole was diagnosed in 4 per cent of the patients and a high percentage of these presented a neurosyphilitic aspect.[1] Osler,[2] in a study of 58,000 patients with diseases of the nervous system, found that 10,498 or 18 per cent were due to syphilis. Ransone[3] emphasized the position of syphilis, including neurosyphilis, as a cause of disability and death in Virginia.

On account of the wide variance in the clinical manifestations of neurosyphilis the significance of early infection with the Treponema pallidum as a primary etiological factor in the production of nervous disorders is frequently overlooked. The dissimilar clinical pictures make the whole subject a very complex one; the symptomatology may vary from mild neurasthenia to manic convulsions. However, with the knowledge that a great bulk of nervous disorders have a syphilitic infection as their basis, there should be made a thorough clinical and laboratory (including spinal fluid) study of all cases with nervous or mental manifestations. The laboratory study is by far the most valuable in discovering and properly classifying neurosyphilis.

Better still, we should treat adequately all cases of early syphilis coming to our attention, thus forestalling in large measure the later central nervous system involvement so common in inadequately and irregularly treated cases. All are cognizant of the fact that a certain number of cases will develop serious central nervous system syphilis in spite of everything that can be done. But, on the other hand, there are many patients now entirely incapacitated and a burden to society, who might be leading relatively normal lives had they been properly and adequated treated during the early stages of their disease.

The older theories, as expressed by the terms parasyphilis and metasyphilis, regarding the mode of invasion of the nervous system in syphilis, are unsupported. The approach of the Treponema pallidum to the nervous system is by way of the vascular system. The organisms conveyed to the nervous system by the blood stream are deposited about the smaller vessels and capillaries. Here an inflammatory reaction is set up as in any other infection. Hence, early neurosyphilis is overwhelmingly inflammatory as distinguished from degenerative in the later stages. Since the vascular supply of the nervous system is the chief route for the supply of antibodies and medicaments to control the infection, it follows naturally that early meningo-vascular syphilis will be most responsive to treatment. It is, therefore, obvious that the time to treat syphilis of the nervous system is while it is near the blood supply to which it owes its initial distribution. Once it has imbedded itself in the scars and inaccessible parts of the brain and cord where the blood supply is sparse, and once it has begun to invade the parenchyma, the outlook becomes progressively more grave. The prognosis depends largely on the degree of fibrous tissue changes with impairment of circulation and the amount of degeneration which has taken place. Once these changes have occurred, we are then deal-

*Read before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, October 6-8, 1931.

ing with late neurosyphilis which at best is very resistant to even vigorous treatment.

With the above related facts in mind, it is our purpose in this paper to present certain observations regarding the preventive and therapeutic aspects of nuerosyphilis as related to institutional and private practice, particular stress being given to the matter of inadequate treatment in early syphilis.

Factors Determining Involvement of the Central Nervous System in Syphilis

As outlined by Zimmerman,[4] syphilitic involvement of the nervous system is, in general, determined by the following factors:

1. The strain of the infecting organism.
2. Variations in reaction of individuals to the Treponema pallidum.
3. Character of the early treatment.

1. The Strain of the Infecting Organism

Regarding this factor many anthorities disagree. The precise bearing of various clinical and laboratory investigations on the question of strains of Treponema pallidum with neurotropic tendencies remains to be worked out by further study.

2. Variations in Reaction of Individuals to the Treponema Pallidum

Perhaps in the treatment of no other disease is less attention given to the general supportive measures and an orderly scheme of life than in syphilis. Unfortunately in early syphilis, the first few treatments relieve the patient of practically all subjective and objective symptoms. From this almost miraculous result they feel that the "shot in the arm" is all that is necessary or required of them, and that they can go out and lead as disorderly lives as they choose, feeling assured of no mishap. Why does this laxity exist in the management of syphilis when in practically every other disease great efforts are made to build up the resistance and increase the immunity of the patient by a strict and orderly regime in which much attention is given to diet, exercise, proper rest, avoidance of excesses, and the correction of associated abnormalities? These factors are of just as great importance in the treatment of syphilis as in any other disease if we are to expect the patient to react favorably. Lack of attention to these details of management determine, to a considerable extent, the invasion of the central nervous system. The physician does not usually take the time and trouble to inform the patient as to his proper care and necessity for long continuous treatment. Here we would like to say parenthetically that any physician who allows a patient with early syphilis to discontinue treatment should regard this as his failure. No case of early syphilis should be permitted to risk his own future or jeopardize his associates by prematurely discontinuing treatment for any reason whatever, including poverty. It takes time, energy, tact and unselfishness to keep some syphilitic patients under treatment after their external manifestations have disappeared, but under no circumstances can this responsibility be shifted from the physician.

There is space here only for the enumeration of other factors which influence the reaction of the host, such as sex, race, heredity, head trauma, alcoholism and environmental factors.

3. Character of the Early Treatment

Our greatest hope in the management of central nervous system syphilis lies in the adequate handling of the infection in its early inception. The patient is often not rendered secure from future inflammatory and degenerative changes for the following reasons:

a. Failure to treat early syphilis to a minimum standard of adequacy.

b. Failure to examine the spinal fluid in the early stages of the disease.

c. The placing of too much reliance on laboratory tests as a guide to treatment.

d. Failure to utilize symptomatic warnings of neurosyphilis.

a. *Failure to treat early syphilis to a minimum standard of adequacy:*

To fix a standard of adequate treatment to suit all cases is well-nigh impossible, for even with the most thorough clinical and laboratory data at hand it is often difficult to say just what degree of dissemination has taken place and, hence, how vigorously a given case should be treated. Keidel[5] states that investigations of numerous observers make it probable that the central nervous system is invaded in all patients contracting syphilis, but that clinically less than 50 per cent of these patients are neurosyphilitic. This fact alone lays emphasis on the importance of prolonged courses of adequately intensive, continuous early treatment in reducing the incidence of neurosyphilis.

TABLE I

Summary of Early Treatment in 225 Cases of Neurosyphilis of All Types Occurring at the University of Virginia Hospital from January 1, 1920, to January 1, 1931:

	No.	Per cent
Primary or early secondary syphilis with no treatment	5	2 22
No treatment except local or short course of medication by mouth	45	20.00
Inadequate early treatment with arsphenamine	26	11.55
Other forms of treatment in inadequate amounts	29	12.88
Minimum of one year of continuous(?) treatment	1	.44
Records incomplete	40	17.77
Denied early infection, i. e., genital or skin manifestations	70	31.11
Cases developing in the early months in spite of standard program of treatment	2	.88
Congenital syphilitics, not treated	7	3.11
Total	225	100.00

Table I, which was compiled from a study of 225 cases of neurosyphilis of all types occurring at the University of Virginia Hospital from January 1, 1920, to January 1, 1931, shows that only one (.44 per cent) of this whole number was treated according to modern minimum standards. In making this study the minimum standard chosen consisted of one year of continuous treatment, using alternating courses of arsphenamine, bismuth, and mercury. Of this group, some contracted syphilis before the advent of arsphenamine, others before modern standards of treatment were in vogue, and still others had been treated inadequately with arsphenamine. No attempt was made to separate these into time periods on a comparative basis or to evaluate the results of eventual therapy. Our chief object was to determine just how many of the cases of neurosyphilis had received adequate early treatment. Further analysis of Table I shows that 20 per cent of the cases had no early treatment except such local measures as cauterization, salves, and powders, or a short course of medication by mouth, or both. A still larger group (31.11 per cent) denied early syphilis, that is genital or cutaneous manifestations, so we may assume, if such data is accurate, that they had no early treatment of any kind In 17.77 per cent of the cases the records were incomplete as to early infection and treatment. 11.55 per cent of the group had been treated inadequately with arsphenamine and 12.88 per cent inadequately with other forms of treatment such as mercury. 2.22 per cent developed central nervous system involvement in the early stages before any treatment had been instituted. 3.11 per cent of the cases were due to congenital syphilis. In only two cases (0.88 per cent) did neurosyphilis develop during the early months of treatment in spite of a standard program of antisyphilitic therapy. In these latter two cases as well as the one case mentioned above, it is impossible to be sure that they took the courses of mercury inunctions properly and regularly.

Moore[6] gives figures as follows on the percentage of positive spinal fluids in treated and untreated cases:

	Chancre Per cent	Secondaries Per cent
Early Syphilis		
Untreated Cases	21 0	22 0
Treated Cases	2.9	13.8
Late Syphilis		
Untreated Cases	17-28	
Treated Cases	14.00	

The lower incidence of neurosyphilis, both early and late, in cases who had received some treatment as compared with untreated cases, makes it imperative that we try further to reduce this incidence by proper management in the early stages of the disease. Further, modern treatment apparently cures clinically and serologically all except about 5 per cent of the cases of early neurosyphilis.

Regarding the controversial question of inadequate arsphenamine therapy as a predisposing factor to the development of central nervous system syphilis or its effect on immune processes, we are unable to draw any conclusions from this study or from the literature.[7] But because of the fact that a few doses of arsphenamine might make the patient more susceptible to neurological involvement, the responsibility of the physician initiating treatment to treat to a minimum standard is increased. The minimum standard recommended by most authorities is one year of continuous treatment and one year of intermittent treatment after the blood and spinal fluid become and remain negative.

b. *Failure to examine the spinal fluid in the early stages of the disease:*

Over-emphasis can scarcely be placed upon the importance of an early spinal fluid examination in the course of syphilis. Here may be found the very earliest and obscure signs of neurosyphilis. Reference is not made to the spinal fluid Wassermann alone. The activity of a syphilitic process in the central

nervous system is indicated earlier, and often only by the cytologic changes, increase in globulin or abnormal colloidal gold curve. Wile and Hasley,[8] in a study of 221 cases of syphilis in which only the chancre was present, found deviations from the normal in the spinal fluid in forty-nine or 22 per cent of the cases. In only eight of this group was the Wassermann test positive. It is excusable, if the patient is carrying a full program of treatment, to postpone the puncture until the end of the first or second course, but more desirable to have the spinal fluid findings early in the disease, particularly if there are neurological symptoms, as a check on the effectiveness of treatment and the amount of treatment which should be given.

A spinal fluid which is negative in all phases can be accepted as negating the presence of syphilis of the cord, brain, or meninges only when a careful physical examination fails to reveal any symptoms pointing to involvement.[9] And even in the absence of signs the negative spinal fluid, like the negative blood Wassermann, does not insure against neuro-relapse if the organisms are not kept subdued constantly until their eradication from the patient's body is accomplished. In contemplating this, one thinks of the slogan of Stokes —"Treat every patient to an arbitrary maximum determined by the best experience of the large clinics and not to an individual minimum determined by his tests."

c. *The placing of too much reliance on laboratory tests as a guide to treatment:*

An unfortunate attitude is taken by some physicians to rely blindly on the results of the blood Wassermann test in the diagnosis of syphilis whether it be of the central nervous system or not, and, further, to rely on the result of a single examination. This is particularly disastrous when there is a question of neurosyphilis, for the blood Wassermann is often negative in this condition. Tendency of the blood Wassermann toward an early negative should be regarded with suspicion and supplemented by a spinal fluid examination. This is suggested on the basis of work done by Moore and Kemp,[10] in which they conclude that a "prematurely negative" Wassermann test may indicate a lack of resistance to the syphilitic infection on the part of the patient.

The Wassermann reaction is only of value in determining a cure when it is done at fairly frequent intervals over a long period of time. It is neither fair to the patient nor very helpful to the doctor's reputation if at the end of a given course of treatment the Wassermann is negative and he is assured of no further trouble, and then later comes back with some kind of a recurrence.

It is not our intention here to deride the various laboratory tests, for, when used properly and interpreted in the light of accompanying data, they are invaluable as diagnostic and therapeutic aids.

d. *Failure to utilize symptomatic warnings of neurosyphilis:*

Many apparently adequately treated cases with negative serologic findings give symptomatic warnings of neural involvement that are often ignored by those who depend too much on the laboratory for their diagnoses. In spite of the widely variant clinical syndromes in which neurosyphilis presents itself, simply the knowledge that a patient has syphilis should be sufficient reason for increased alertness to even the vaguest signs and symptoms pointing toward neurological involvement. Stokes[11] enumerates the following as suggestive symptoms: Occurrence of a follicular type of eruption in the secondary stage and of marked alopecia; persistent headaches; cerebral neurasthenic symptoms, including, syphilophobias; marked nervousness and tremor, and insomnia in the syphilitic patient; slight or transient pupillary abnormalities; reflex anomalies, including exaggeration of certain reflexes with reduction of others; and signs of cranial nerve involvement.

In the above connection, attention should be called to a group of cases of brain syphilis which present a symptomatic picture almost indistinguishable from paresis. There is a diffuse inflammatory process throughout the cerebrum. These, under adequately intensive, continuous treatment over a long period of time show such improvement as would be impossible in a degenerative condition such as paresis. This is illustrated by the following brief case report:

A white male, age thirty-one, was admitted March 26, 1927. He was restless, talkative, irritable, excitable, easily distracted, indecent and rowdy. He had unsystematized delusions of persecution and ideas of grandeur. There was inability to solve problems and a very poor memory. History of genital sore ten years previously with only local treatment. Laboratory examinations were atypical of

paresis, but positive for neurosyphilis. It was impossible to keep him either at home or in a general hospital and he was sent to an institution for the insane. There he was pronounced a hopeless case and antisyphilitic treatment abandoned. His parent insisted on his treatments being continued, and in about two months he was symptomatically well and able to resume his regular occupation. From later reports this improvement was apparently permanent.

Summary

1. The high incidence of syphilis as a cause of disorders of the nervous system is pointed out.

2. Emphasis is laid on the fact that pathologically and clinically early neurosyphilis is predominately meningeal and meningo-vascular.

3. Factors determining the involvement of the central nervous system in syphilis are enumerated and discussed.

4. A study is reported regarding the history of early infection and treatment in 225 cases of neurosyphilis of all types. Only one case in this group had received standard antisyphilitic treatment in the early stages of the disease.

5. Clinically, meningo-vascular neurosyphilis cannot always be differentiated from paresis. For this reason every case of neurosyphilis should be given regular antisyphilitic treatment. A pertinent case is cited.

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Discussion

Dr. Raymond Kimbrough, *Norfolk:* A prominent feature of the meeting of this society last year was a symposium on syphilis. We were reminded of the great losses in life and health that resulted from syphilis. The value of the prevention of infection and the prevention of the late manifestations was pointed out. It was shown that treatment of early syphilis, if prompt and effective, would practically eliminate late syphilis.

This paper forms a valuable appendix to the symposium of last year's meeting and to that of this year's meeting on mental hygiene.

Whether or not a few doses of arsenical treatment are worse than no treatment in fostering the development of neurosyphilis is not so important as that adequate treatment will prevent the late manifestations in almost all cases. Adequate treatment, even in very early syphilis, includes more than the arsenicals. Twenty years' experience has shown that the arsenicals should not be relied upon alone. The use of bismuth, mercury, iodides, and the accessory general care are very important.

The problem of the prevention of these complications of syphilis involves more than the formula for therapy and an early diagnosis. It has been stated that the State of Massachusetts spends $200,000 annually for the care of patients with dementia paralytica alone. Other states are in a similar position. It is evident that these huge sums of money could be saved if the early cases were adequately treated, and it is natural that the medical profession should consider trying to eliminate this expense by assuming control of early infections. If we practitioners wish to continue to treat syphilis, we must recognize and accept our responsibility to give our patients an early diagnosis and adequate treatment.

Dr. Ralph P. Truitt, *Baltimore:* I started in psychiatry in 1910. At that time a great deal was done in the treatment of paresis. The hospital where I was located completed a Wassermann survey of the inmates, spinal punctures were done and treatment with salvarsan instituted when indicated. Because the treatment was not always successful it was thought that the injected material was not reaching the seat of the lesion through the circulation. There was later confusion about the spinal fluid circulation. At first intravenous, then intraspinous, later subdural, and still later direct injections into the ventricles were the treatment methods instituted. Of course, there were enthusiasts who supported these different methods of treatment as they advanced. It was believed by many that in those cases successfully treated they were probably vascular or cerebral types of syphilis rather than paresis. Undoubtedly a great deal can be done to arrest the paretic process, but it is most difficult to differentiate clinically, and even sometimes at autopsy, between vascular or cerebral types of syphilis and paresis. I would not detract from the results reported in the treatment of paresis by chemicals and also temperature producing agents, but one

must consider, however, the fact that when there has been definite destruction of the brain substance we have not reached that point where we can replace the destroyed cell material.

Mistakes are possible in clinical diagnosis. There should be intensive treatment of all syphilis at whatever stage it is found regardless of the nervous system symptoms and whether the clinical picture is that of paresis or not.

Dr. Smith, closing the discussion: There is very little to add to the discussion. It should be emphasized that any number of atypical neurological and psychiatric conditions—for example, hemiplegia in early life—when properly investigated will be found to have a syphilitic etiology. All neurological and psychiatric cases, whether institutional or private, should have a routine blood Wassermann and spinal fluid examination as a minimum for the elimination of syphilis before they are classed as incurable conditions.

THE RELATION OF CERTAIN PELVIC CONDITIONS TO REMOTE CAUSES AND EFFECTS.*

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Much of every gynecologist's practice is concerned with possible association of pelvic pathology and systemic disorders, such as neuritis, arthritis, mental disease and the like, mostly with doubtful conclusions. More of our work deals with genital defects secondary to functional disturbances of remote endocrine connection, for which new discoveries have provided means both of diagnosis and treatment. Since the latter portion will inevitably multiply and inasmuch as some misunderstanding, and as yet many undiscovered factors still obscure the practical usefulness of present day knowledge of female endocrinology, I wish to briefly emphasize the necessity for adequate attention to our patient's general as well as pelvic status.

Surgical Aspects: Our management of gynecopathy has progressed in spite of two obstacles, namely, that well known feminine urge to ascribe most any complaint to, and accept dubious proposals for "womb trouble"; and the equally foolish medical tendency to choose meddlesome interference without reason. Such partnership in therapeutic experimentation suggests the description of the late Dr. John B. Deaver upon observing patient and physician with stethoscope between, of a fool on one end and a knave on the other.

But times have changed, so that, for example, aimless or harmful excursions in the name of dilatation and curettage have given way to endometrial exploration. Similarly, mischievous dilatation of the cervix for stenosis, by metranoikter and stem pessary in the hope of relieving sterility and painful menstruation yields to endocrinous developmental therapy. No longer is the uterine cavity scalded with steam under the technic of atmokausis when metrorrhagia is caused by lack of thyroid or insufficient progestin and excess folliculin. Just as it is futile to char the uterine cavity with zinc chloride solutions for specific cervical leucorrhea when Hyam's conification, or electro-thermic desiccation is indicated; or to amputate or suture the cervix when linear cauterization will cure erosion and ectropion; so is it unethical to suspend the uterus for quiet, uncomplicated backward displacement, when backache is occasioned by flatfeet, sacroiliac strain or obesity.

Experience with my last two hundred consecutive office patients illustrates the folly of recognizing one's cases by vaginal peculiarities alone, but indicates that the public is not much impressed with the importance of the pelvic organs as indicators of functional systemic disturbances, because of ten women seen for routine health examination, four before and six after marriage, only two reported on account of general disturbances; one for oral herpes aggravated during menstruation, and one for acne vulgaris with menstrual irregularity. Six women complained of dyspareunia, all with more or less nervous instability, but only one was sure of the interrelation; and there were additional evidences of the failure of women to realize that physical marital incompatibility is the commonest cause of nervous breaks, just as vicarious sexual stimulation is the usual cause of functional bladder irritability.

In passing, I can mention twenty-four examples of sterility, sixteen largely mechanical or pathological, eight entirely functional. Also complete backward uterine displacement appeared forty-four times, sixteen in simple form, only four complaining; but twenty-eight complicated, of whom four only were free of symptoms.

Several significant conditions featured the series, first—two cases of senile cervical atresia with pyometra, one showing neuritis and the other mild arthritis, both relieved by uterine drainage. Somewhat similar was my experience with chronic arthritis and non-speci ic

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cervicitis (hypertrophy, induration, cysts, etc.) in one office case and in several women from the arthritis clinic of the Orthopedic Hospital, namely, improvement in the joints following cauterization of the cervix. One might argue that some of the above cases had reached the menopause, when arthritis is not uncommon; and that the gonococcus, for instance, cannot invade the system by way of the cervical substance; also, that countless numbers of women suffer with non-specific cervicitis without ever experiencing joint trouble; yet the cervix must be considered as a possibility in looking for a focus among infectious etiological possibilities. E. C. Rosenow's principle of electrophoretic potential of streptococci as isolated from atria of infection in studies of encephalitis and other diseases of the nervous system, and extended to epidemic hiccup, spasmodic torticollis, multiple sclerosis, neuritis, sciatica, etc., can separate neurotropic from arthrotropic streptococci, and should be available for cervical studies in this connection.

Medical Aspects: The relation of gynecology to the ductless glands is so intimate that menstruation and even reproduction should be considered expressions of systemic action. Aside from these two features, knowledge of the endocrine system is far more important in women than in men for several reasons:

1. Control of the hormone producing glands lies in the sympathetic nervous mechanism, which is readily affected by feminine sensitiveness and emotional variability, "angel food" diet, lack of exercise, etc.

2. Marked variations in disposition and reactions complicating puberty, menstruation and the menopause, as well as pregnancy, designate critical alterations in ovary, thyroid and pituitary, as shown by specific tests.

3. The thyroid gland is ten times more often affected in women than in men, and there is greater interrelation between ovary and suprarenal cortex.

4. Menstrual disorders, and endometrial histology are excellent guides to certain glandular dysfunctions.

Physiology: In order to manage genital dysfunction, including functional sterility, one must have a clear perspective of woman's entire system. We are familiar enough with extreme changes in some of the endocrine organs, especially before puberty, such as cretinism, gigantism or adiposa dystrophia genitalis, eunuchoid individuals with long extremities rather than female child castrates of which there have been but few examples, etc. But exaggerated general characteristics of critical defects in thyroid, pituitary and ovary prior to puberty do not concern us in this discussion, and similar deficiencies in adults rarely constitute gynecological problems, so that we must be able to discover the far more frequent although often obscure expressions of mild glandular disorders, in adolescents and mature women, and in all such cases take advantage of new biologic tests.

Individual Glands: Although the pineal and thymic glands atrophy near puberty, they do not concern us in a practical manner, nor do the parthyroid and pancreatic hormones complicate our diagnostic or therapeutic resources from a strictly genital standpoint. But the interrelated multiple functions of ovary, thyroid and anterior pituitary, and to some extent of the suprarenal gland, are so significant to gynecologists as to warrant a brief summary of each before discussing genital dysfunction in adults.

Ovary: There is evidence of foetal ovarian activity; and of some function in the child's interstitial tissue or undeveloped follicles, but we are concerned only with the mature ovary which, under the influence of the gonad stimulating fraction of the anterior hypophysis, shows its first major product:

A. *Folliculin:* Theelin, estrin, etc., or the active principle of the follicular fluid which develops coincidentally with egg ripening for the purposes below:

1. Congestion and development of the tubular genital organs.

2. Growth of new endometrium from the post-menstrual through the height of the interval stage, but never into the pre-menstrual or pre-conceptional type.

3. Stimulation of uterine peristalsis or rhythmic contractions, so that experimentally excess of folliculin can produce abortion.

4. Association with progressive cyclic activity of the anterior (luteinizing) pituitary hormone.

5. Synergestic and essential for, yet also antagonistic to the second major product of the ovary, corpus luteum secretion.

6. Excretion: Normal women (Frank) eliminate 30 to 100 mouse units of female sex hormone per litre of urine, or 800 to 1,500 mouse units during an entire menstrual cycle, most at the time of ovulation and one or two

days prior to menstruation. For several days before each period one mouse unit of hormone per 40 c.c. of venous blood (25 to 40 M. U. L.) also may be demonstrated by the accurate and practical castrated mouse oestrus test.

B. *Progestin:* Corporin, etc., or the hormone derived from luteinization of the follicle cells under the influence of specific anterior pituitary action, with these effects:

1. Progressive development of the interval endometrium into the pre-menstrual type, but only in conjunction with folliculin, which is secreted by the corpus luteum as well as in the follicle fluid, since progestin alone cannot modify the uterus of an untreated castrate.

2. Depression of rhythmic uterine contraction, and inhibition of ovulation, so that experimentally excess of progestin from administration of lipoid extract can prolong pregnancy to the point of fetal death; and, conversely, insufficiency of this hormone, as with ablation of the corpus luteum in pregnant rabbits, may result in abortion. In the human, however, at least after the first few weeks, the corpus luteum is not essential for pregnancy. Theoretically, it is progestin that prevents superfecundation by inhibition of ovulation.

3. Promotes excretion and inhibits production of folliculin.

4. Reciprocates with cyclic anterior pituitary activity.

5. Experimentally, relaxation of the pubic ligaments of the gopher (Hisaw) and mucigination of the vaginal mucosa of rodents, as seen in pregnancy, denote additional fractions of aqueous corpus luteum extracts.

6. Excretion: Progestin has not been definitely demonstrated in the circulation.

Anterior Pituitary: Composed of two main types of cells, produces five or more hormones or separate fractions, which may be cyclic stages of a fewer number. We are concerned mainly with two in the mature normal woman as follows:

A. Prolan A—row 1, alpha, etc.—controls maturation of the ovum and follicle hormone activation.

Excretion: A normal non-pregnant woman will show as high as 25 rat units per litre of blood during the maximum concentration of prolan A., i. e., from six to nine days after onset of the previous menstrual period, following which as much as 10 R. U. L. may be removed from the urine, as proved by means of follicle ripening (A. P. R. I), or blood points (A. P. R. II) in ovaries of immature rats injected with the woman's extract after removal of sex hormone from the blood or urine.

B. Prolan B—row II, Beta, luteinizing hormone, etc.—which stimulates formation of lutein substance and activation of progestin.

Excretion: The normal non-pregnant woman will show occasionally traces of prolan B in the blood according to the appearance of atretic corpora lutea (A. P. R. III) in immature mice following injection tests. Excretion of prolan B is very rapid, as proved by disappearance of the hormone after introduction in large quantities by means of transfusion of blood from a pregnant into a non-pregnant woman. Prolan B, however, is not stored in the pituitary.

Products of Conception: (The gestational gland—Frank). After nidation, pre-pituitary hormones appear in the follicular fluid and also in the placenta in great amount, due to explosive pituitary over-activity, resulting in recovery from the mother's venous blood of as much as 3,000 M. U. L. of prolan A and B, and from the urine 5,000 M. U. L. (Frank), 6-8,000 M. U. L. (Aschheim—Zondek), 8-10,000 M. U. L. (Friedman), constituting the basis of the Aschheim-Zondek biologic tests for pregnancy.

Moreover, at first the trophoblast and later the placenta elaborates along with the corpus luteum of pregnancy relatively enormous amounts of female sex hormone, so that the amniotic fluid is super-charged, and 50 M. U. L. of hormone may be recovered from the patient's blood and 10,000 M. U. L. from the urine, forming the principle underlying the Mazer-Hoffman biologic test for pregnancy. Much of each hormone is also excreted by bowel.

Thyroid Gland: Needs no discussion except that slight disorder with very moderate deviation of basal metabolic rate may produce disproportionately greater genital manifestations. A new thought in connection with pregnancy is found in the recommendation of iodine (Lugol's solution) by rectum for hyperemesis gravidarum, which I have tried with variable results.

Suprarenal Cortex: Pigmentation of the external genitals in Addison's disease; association of over-developed adrenals and genitalia in negroes; well-developed adrenals and genitals in female monstrosities showing cranial defects with pituitary impairment; accessory

suprarenal cortical collections along the internal urinary and genital tracts; menstruation under shock; impotence with "adrenal asthenia"; and, finally, similarity of the lipoid adrenal cortical cells with ovarian lutein elements suggests close relation of these glands. Experimental evidence can be found in both metabolic and vasomotor effects from luetin activity under stimulation of the suprarenal substance.

Specific Disorders: *Folliculin* may be primarily scant in amount and activity, or secondarily diminished by insufficient pituitary activation, so that in either case hypoplasia of the tubular genital tract, including endometrium, will result. A curious form of long continued deficiency of prolan stimulation of follicular development is characterized by failure of rupture of incompleted graafian follicles, which undergo atresia, so that the ovary is studded with collections of atretic cysts without luteinization. In turn, the endometrium, unable to transform from interval to pre-menstrual state and to be cast off in menstruation under the normal action of corpus luteum progestin, instead responds to constant folliculin stimulation from the multiple atretic follicles by hyperplasia, expressed in the form of amenorrhea, irregular anovular "menstruation," or more commonly as the prolonged and often serious adolescent or climacteric bleeding, depending upon a certain additional specific bleeding factor elaborated by the anterior pituitary. Thus we see an original hypofunction changed into excess accumulation of female sex hormone, associated with endometrial hyperplasia, and demonstrated clearly by hormone tests as well as organic change in the ovary, but *with or without* uterine bleeding. The medical correction of this condition will be considered later, but at this point should be mentioned the improvements obtained from excision of the follicle cysts, as recommended by Geist, Macomber and others.

Progestin: As described under folliculin disorders, insufficient or absent progestin from lack of pre-pituitary luteinizing hormone is incompatible with pre-conception endometrial development and normal menstruation. There is no available progestin preparation for therapeutic purposes, but, if so, female sex hormone accompaniment would be essential for results.

Prolan: Most authorities recognize at least two pre-pituitary ovarian hormones, but since prolan B cannot be isolated from woman's blood or urine without A, and since Mazer states positively that B is only progressive development of A, and Friedman will not admit that the two are separate, disorders of the anterior hypophysis may be grouped together.

Insufficiency has been described of necessity under dysfunction of the ovarian hormones, and is far more frequent than primary disorder of the ovary, or indirect genital defect from thyroid abnormality.

General Disorders: The incidence of types of functional disorders peculiar to women, taken from Mazer's experience with 103 cases of functional sterility, is thyroid four, ovarian fifteen, pituitary sixty-one and doubtful twenty-three. For the classification of patients, in addition to the biologic tests already mentioned, pre-menstrual curettage must be performed because hyperplasia of interval type endometrium may be associated with excess or absent bleeding, and, in considering functional sterility, presumptive "anovular" or grossly normal menstruation will occur without pre-menstrual type of endometrium as frequently as 40 per cent.

1. *Ovarian Dysfunction:* Primary hyposecretion is disputed, but is suggested by eunuchoid or excessively feminine characteristics (Mazer), normal or scant hair, average weight or thin, nervous instability and fussy disposition, amenorrhea, hypomenorrhea or oligomenorrhea in 50 per cent, with genital hypoplasia. Female sex hormone levels are lower than normal, but there is compensatory overactivity of the pre-pituitary secretions, demonstrable by Frank's tests.

Primary ovarian hypersecretion may be expressed by the over-sexed individual showing no stigmata of pituitary over-growth, for which amputation of the clitoris is still frequently urged, but should be always refused.

2. *Pituitary Dysfunction:* Primary hypofunction is associated with characteristic obesity, hypertrichosis, male type of genital hair, stable or slow nervous reactions, increased sugar tolerance (low post-pituitary activity) eye-ground changes such as enlarged blind spots, yellowed discs, and reduced visual fields. The female sex hormone is low in such women, but so is prolan, none of which can be demonstrated. Naturally impaired genital development and secondary menstrual disorders will occur.

Pre-pituitary hyperfunction is expressed in

most pregnant patients by coarse features, decreased sugar tolerance, headache, etc., and occasionally by the acromegalic type of gynecologic patient, who will ultimately show decreased pre-pituitary action due to degenerative cell changes. Elevated prolan level in the blood is additional proof.

TREATMENT: It is unfortunate that genital dysfunction is usually in the form of hypoplasia with undercharged ovarian hormones, for which we can find not very prompt curative agents. However, in spite of warnings from Frank and Rubin, appropriate cases will respond to the following limited agents:

1. *Female Sex Hormone:* Great numbers of commercial preparations are labeled with from 10 to 50 rat units per ampule or tablet, but even the best (theelin and progynon) assay less than indicated when ready to use. This discrepancy plus inadequate dosage, interrelation of other hormones, and failure to choose biologically diagnosed women at the proper phases are sufficient reasons for the variable results in the literature. Mazer advises an amount of sex hormone directly proportionate to the degree of uterine hypoplasia, as high as 500 to 1,000 rat units daily, administered in frequently repeated doses, particularly by mouth. The Schering Corporation has recognized the value of this method by the manufacture of their newest tablet containing 400 rat units each, as compared to their present tablet of 50 rat units, but from 5 to 7 times as much is required by mouth as by intramuscular injection.

There is no doubt that the sex hormone can enter the circulation, for it may be recovered rapidly from the urine; and the tubular genital tract, although not the ovaries directly, can be markedly developed, so producing a uterus responsive to residual ovarian function, indirectly affected pre-pituitary or to the effect of additional artificial agents. There should be little fear of ovarian sclerosis in women following prolonged female sex hormone administration, as experimentally possible in animals, because the expense of the enormous number of units required would prohibit.

Painful menstruation, further assisted by thyroid extract, and menopausal vasomotor annoyance, will also respond to similar treatment, as will occasionally frigidity.

2. *Luteinizing Hormone*—Prolan, antuitrin, follutein, etc. Parke, Davis and others have prepared an anterior pituitary hormone from urine of pregnant women (and other firms from placental tissue). The former Friedman has found to contain 100 rat units or more when fresh, gradually diminishing, but holding a potency of about 80 R. U. per c.c. for four weeks or more. With this preparation Emil Novak, Anspach, and others have secured frequent and amazingly rapid relief of irregular functional uterine bleeding, associated with hyperplasia, using 200 R. U. per injection. The quick response proves that a pituitary bleeding factor is involved, but ultimate cure after cessation of treatment suggests a correction of ovarian-pituitary imbalance by corpus luteum production.

I can see no reason why this product, preceded by female sex hormone administration, will not prove eminently successful in amenorrhea and other genital hypoplasias, but cannot present sufficient experience at present. In any event, after years of effort, for the first time in the last few months we have available potent anterior pituitary hormone extracts.

Friedman has just shown that luteinization following administration of extracts from pregnant urine (prolan) occurs as a direct effect on the ovary and not indirectly via the pre-pituitary, by injecting small quantities of the luteinizing hormone straight into the follicle and obtaining a corpus luteum which although it becomes atretic rather soon, in spite of the presence of unchanged follicles and much folliculin in the opposite ovary, causes a decidual tumor in the uterus. Thus, in doe rabbits, proven to be in heat by the removal of a freshly dropped litter, Friedman has recently secured at will any degree of follicle development by injections of luteinizing hormone, in average amounts of 1 to 1.2 R. U. per kilogram.

I can, therefore, predict that, given any women with not too long standing amenorrhea, in the course of say twelve months administration with cyclic amounts of the above product, possibly combined with female sex hormone, it will be possible, in the absence of pathology, not only to promote normal menstruation but also conception. This should be possible in spite of much larger doses required for hypoplasia than for functional hemorrhage, inasmuch as the preparation previously referred to is non-toxic, whereas the German preparation "prolan" is the reverse, as expressed mainly by nausea and vomiting.

Thyroid Extract: Indirect hypoplasia and

insufficient menstruation from hypo-thyroidism, including functional sterility, is infrequent compared to the pituitary type, but will yield readily to proper dosage and weight reduction. Excessive bleeding due to hypothyroidism responds promptly to thyroxin.

X-Ray Treatment: Primary hypo-ovarism with amenorrhea treated by X-ray irradiation of ovaries alone with from 10 to 15 per cent of a skin erythema dose three times only in two weeks and *not repeated*, has changed to regular menstruation and conception in sufficient instances to warrant being included in our list of therapeutic agents. Gynecologists explain this reaction on a basis of "ovarian stimulation," although most roentgenologists will not agree with such explanation. In any event, only an expert radiologist can avoid the real danger of possible permanent ovarian damage under even such mild exposure.

Ovarian irradiation in heavier amounts must, of course, be occasionally resorted to for ovarian hyperfunction, particularly for oversexed women, puberty and climacteric hemorrhages, etc.

X-Ray for Pituitary Dysfunction: Irradiation of the pituitary gland alone with mild exposure, followed in some instances by similar "stimulation" of the ovaries, may be expected to regulate menstrual flow in 80 to 90 per cent of women and to increase fertility as much as 50 per cent in properly selected individuals. Great caution must be exercised to avoid X-ray exposure of the ovaries and pituitary gland together in primary ovarian failure or in thyroid deficiency.

General Measures: Attention to exercise, hygiene, diet, etc., should accompany the foregoing therapeutic efforts, but should not constitute the entire treatment. Frank, for instance, minimizes irradiation and discredits organotherapy, to rely mainly upon a high protein diet for inanition amenorrhea; and upon elimination, occasional venesection, and high calcium feeding for the reduced female sex hormone—increased pre-pituitary secretion syndrome at menopause. On the other hand, in the management of hyperfunction the same authority, feeling that puberty metrorrhagia is usually self-limited, prefers in addition to repeated D and C, or reducing irradiation if needed, rest, fresh air and sun, tonic diet and occasionally transfusions, reserving for a separate group ("pre-menstrual tension") limitation of fluids, calcium feeding, and elimination by caffeine and saline purgatives.

With respect to the effect of limitation of fluids upon menstruation, Temple Fay has repeatedly called my attention to the usual suppression of menstruation following his original method of fluid reduction to 30 total ounces per day or less in cases of increased cerebral pressure, and I have observed a tendency to this effect with similar restriction in certain cases of menorrhagia.

Finally, the necessity for vitamines, particularly "E," and for minerals especially manganese (McCollum) should not be forgotten.

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1918 *Pine Street.*

HAY FEVER WITH COMMENTS ON THE PAST SEASON IN RICHMOND.*

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It was not until 1911 that Noon successfully demonstrated the value of pollen extracts in the treatment of hay fever. Prior to this time medical control of this type of allergy was baffling and disappointing. This new knowledge was immediately capitalized by many proprietary houses, and physicians everywhere began subcutaneous immunization following schedules enclosed in every package of pollen extract sold by these concerns. Patients were encouraged to attempt their own treatments, so simple did the procedure seem. The results were disappointing. On the other hand, numerous qualified workers in this field have shown what uniformly excellent results can be obtained with a better understanding of the principles involved—careful adherence to a technique designed to discover the qualitative as well as quantitative reactions of the offending protein,—and a realization of the fact that the extract should be given in such quantity as to really immunize the patient, at the same time all the safeguards, that a knowledge of the hazard of the procedure demands, should be thrown around him.

The Clinical History of patients suffering from this type of allergy is both interesting and informing—interesting, because of the striking hereditary factors; informing, because of itself a careful history will almost certainly point the way to the absolute demonstration of the offending agent. In this way we discover whether the patient's symptoms develop in the spring, the early summer, or the fall—corresponding to the flowering seasons of the trees, grasses and weeds. The Physical Examination is naturally important as it relates to the nose, throat and sinuses, and their obviously related and correctible pathology.

In pursuing the problem of diagnosis, the next step is an important one—a demonstration by the cutaneous test of the specific pollen sensitization. Essential at this stage is a reliable pollen extract. Extracts freshly prepared by the allergist himself have satisfied this demand. Equally important is the choice between the scratch and the intra-cutaneous method. It is now generally admitted that the safety of the patient demands that he be given the scratch method by preference. The final point of importance is the use at the outset of sufficiently dilute extracts to avoid at this stage the danger of anaphylactic shock. It is difficult to forget a small boy who received an intradermal injection of a dilution somewhat stronger than it should have been. He immediately displayed alarming symptoms—generalized urticaria, cyanosis, dyspnoea, a thready pulse and rapidly developing edema of the lungs. Repeated injections of adrenalin were required over a period of twelve hours.

Having demonstrated one or more plants, to the pollen of which the patient is sensitive, in the next step we seek to determine the degree of sensitiveness that exists to these respective pollens. This is accomplished by a series of graduated doses beginning with dilutions often as low as 1-100,000 and working up to a satisfactory wheal. We are now ready to proceed

*Read before Clinical Club, Stuart Circle Hospital, Richmond, Va.

with the specific treatment based upon a quantitative as well as a qualitative knowledge of the offending pollen. It is usual to begin with a dose just under that which produces the smallest skin reaction. It is customary to administer the specific extract beginning six or eight weeks in advance of the clinical onset of the disease in graduated doses at three or four day intervals, attempting to get as much as possible of the specific pollen extract into the patient in the allotted time without running the danger of reaction. The procedure is not always as simple as this,—in the case of multiple sensitization, which is usual, one has to remember that whereas, for example, timothy extract will ordinarily protect against sensitization to all the other grasses, among the trees this does not hold. Except in well recognized families such as the oaks, our extracts of tree pollen have to contain all the pollens to which the patient is sensitive. This general rule applies also to the weeds. Another important point in making the selection of the specific pollen for treatment is the fact that clinical hay fever is not produced by all the pollens to which the multiple sensitive patient may be sensitive. For instance, a patient may react to both ragweed and timothy and have his hay fever only in the fall. It is obviously useless to include timothy extract in his treatment. This brings us to an important point, namely, that in the selection of the therapeutic pollen extract, one must give due consideration to the relation of the time of pollination to the clinical manifestation of symptoms. Careful botanical surveys have been made in a number of sections in this country and the seasons of pollination for various trees, grasses and weeds are well known for New England, the West, and the far South. Such a survey of the pollination seasons of Virginia would be of distinct value in the management of hay fever in this state.*

We pass rapidly over what is known as the non-specific treatment of hay fever. It comprises the time-honored local measures,—applications to the eyes, nose and throat, the use of the X-ray and radium. The bromides internally, a sea voyage, a trip to the mountains, confining one's self to a room with windows closed and free from drafts, especially at night, the use of pollen filters in windows, or actually worn in the form of a mask, have all proved of service, but in no sense can be considered to take the place of specific treatment.

The onset, duration, severity and type of hay fever varies geographically and depends chiefly upon the indigenous flora of each locality. Our Virginia season is earlier than the Northern season and a little longer, reputed to be due to the later killing frosts. Our first killing frost in Richmond comes usually on November 2nd. As has been said, we have three definite seasons, corresponding to the flowering of the trees, grasses and weeds. This is not true in New Orleans or California where pollen produced hay fever occurs all the year round. During the pollen season everywhere the lower layers of the air are laden, by actual calculation, with tons of pollen, but careful counts show the concentration of pollen far greater over western cities than over our eastern cities. For instance, the average in one year for New York, Philadelphia and Richmond was 30 pollens per cubic yard of air as against an average the same year of 600 for Oklahoma City, Ann Arbor and Indianapolis. It is a very old but nevertheless true notion that a change in residence, a visit to the mountains, an ocean voyage, a sojourn in Europe (where by the way there is no ragweed) works wonders. We in Richmond know nothing of mountain cedar as an exciting cause. In Texas it is a serious menace. The same may be said of the Russian thistle and the sages in the Rocky Mountain district.

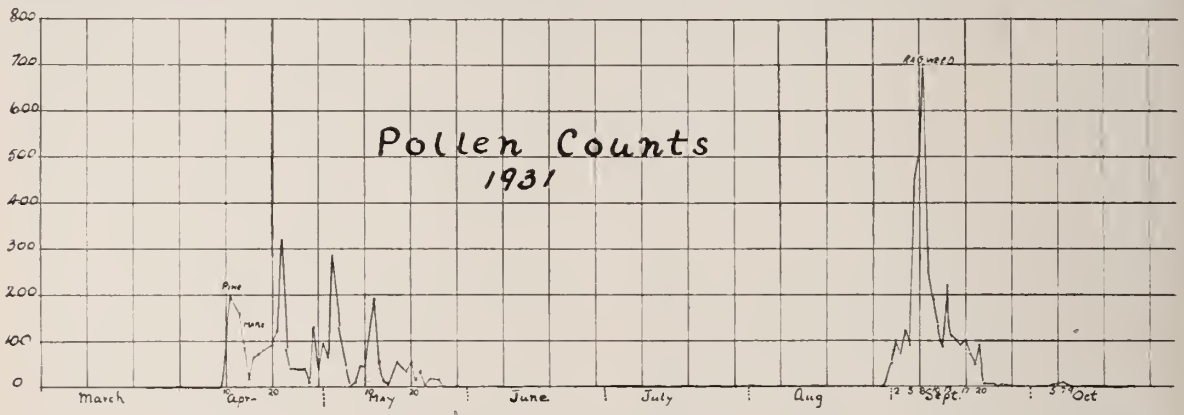
The specific botanical variation in different districts, less obviously dissimilar, may be just as marked and as puzzling. A move of only a few miles may be sufficient to afford relief to a patient with hay fever. New Orleans and Chicago hay fever are very different, one is a city of grasses, the other a city of weeds. All of these facts point clearly to the necessity for accurate botanical surveys of the wind pollinated plants. A number of excellent investigations, as I have intimated, have recently been made on the Pacific Coast, in Texas, Memphis, New Orleans and as near as Washington, D. C. A similar survey for Richmond and vicinity is needed.†

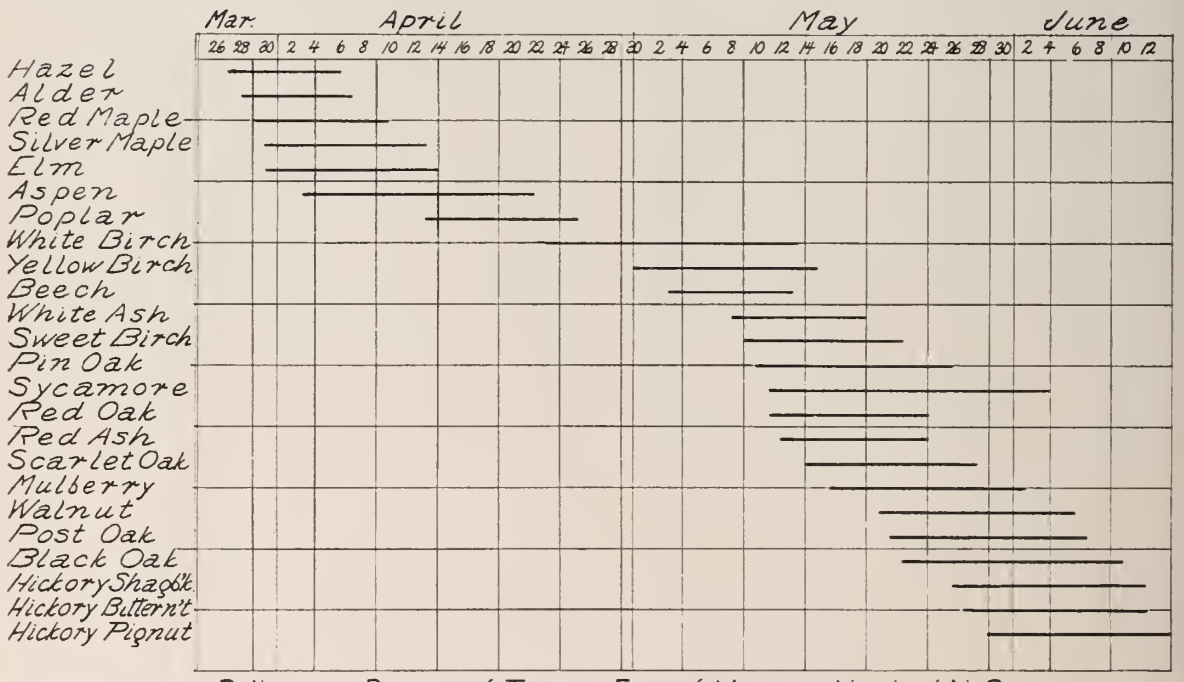
There are other important facts connected with pollen laden air. Significant hourly fluctuations occur. The highest pollen counts are encountered in the early morning, the low-

*Merriman has recently published The Flora of Richmond and Vicinity. This little work unfortunately contains nothing about the trees or the grasses.

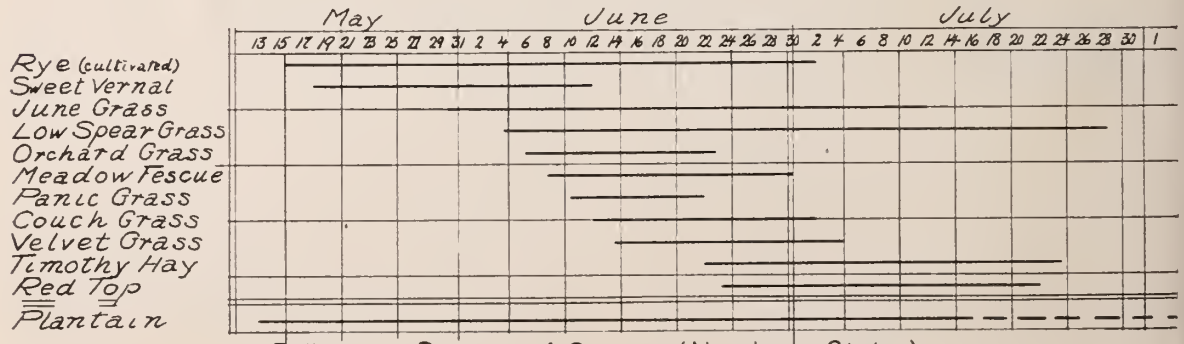
†The tree population of Richmond now consists chiefly of pin oaks, maples and elms, though there are still many of the old trees left—cottonwoods, ginkgos, mulberries, sycamores, poplars, catalpas.

est after midnight. Sunshine, wind and rain are important factors. Daily fluctuations are more easily appreciated. Here the causes are also meteorological. High winds bring pollen clouds and hay fever distress. The falling barometer preceeding the storm is keenly felt by the hay fever sufferer. Rain clears the air. Cloudy days, still clear days after a storm, are periods of low pollen count. Finally seasonal fluctuations have to be reckoned with. Weather





Pollination Periods of Trees East of Miss. and North of N.C.



Pollination Periods of Grasses (Northern States)

that is good for agriculture produces fine abundant grasses and bumper crops of ragweed. There are probably other as yet little understood factors which determine why hay fever varies from year to year.

We have made daily atmospheric counts during the last twelve months. The results have not been interesting except during the months from March to October. Vaseline coated slides were exposed for periods of twenty-four hours in a rain protected cover to lateral currents of air on the roof of a three story building. The slides were examined daily. As can be seen from the chart our first pollen was caught early in April and continued through May. The tree and grass seasons overlap on this chart. The highest count was 320. Pine and maple were the predominating tree pollens. The ragweed season was late this year as can also be observed on the chart. The counts around Labor Day (September 7th) were enormously high for this region. It was at this time that several of our cases complained of eye and nasal irritation.

A comparison of our pollen count chart with Richmond weather conditions in August and September discloses well known but interesting facts. From the 19th of August to the 1st of September there were only two days which were not cloudy, and only three days in which there was not some rain. The average velocity of the wind was not great. These facts probably account for the rather late appearance of pollen upon the exposed slides and the tardy development of symptoms in hay fever patients. As a matter of fact we did not get ragweed pollen until the first of September. September was ushered in with clear weather, sunshine and southwest winds of moderately high velocity. On the second of September the average hourly velocity was 10.7 miles per hour and on this day we experienced our first high counts. Although from the second to the seventh it was fairly windy, this fact alone is not believed to be sufficient to account for the extremely high pollen counts gotten between September 6th and September 8th, when counts of 450 to 700 were registered—counts comparable to those obtained in the western cities. On the ninth and tenth the wind dropped to a little over two miles an hour and the pollen count showed a correspondingly sharp decline. The twelfth was another windy day with an average hourly velocity of 12.6 miles an hour, which corresponds to another peak in the curve. Pollen almost completely disappeared from the air this year after September 20th. Our first frost came October 15th and we did not have a killing frost until November 3rd. Obviously the usual statement that hay fever continues until frost is not strictly true.

Another important fact bearing upon hay fever in cities is the relative frequency of vacant lots, harboring weeds and grass, to the so-called built up area. It is claimed by the Richmond Department of Building that only from 15 to 20 per cent of the corporate area of the city falls into the class of unimproved property. Many cities and some states have weed laws. We have one in Richmond. Naturally the crux of the matter lies in the enforcement of the law. That we have a particularly fine stand of weeds on most of our vacant lots this year, any one who cares to keep his eyes open will notice. Our ineffective city ordinance reads: "When so required by the chief health officer of the city, all owners of vacant lots or vacant portions of lots within the city of Richmond, within five days after receiving such notice, shall remove weeds or like vegetable growth from such lots."

A brief analysis of a small series of thirty-four recent cases of hay fever has been attempted. This study discloses the decided predominance of the fall type, with ragweed as the chief offender. Eighty-two per cent of our cases were due to weeds, 15 per cent to grasses, and 3 per cent to trees. Richmond is essentially a community of weed induced hay fever. When the analysis of these cases is further considered it appears that practically all of the cases sensitive to weeds give skin reactions also to grasses. Some cases with symptoms occurring only in the fall react fully as strongly to the grasses, indicating the undesirability of being guided entirely by skin tests in the choice of a prophylactic pollen extract, and of the great importance of considering the history of the attacks in the knowledge of the local flora and respective seasons of pollination. One case actually reacted more strongly to ragweed and cocklebur than to red top, with the clinical symptoms, however, occurring only in the spring. Skin sensitization, therefore, does not necessarily parallel mucous membrane sensitization. None of our cases have reacted positively to plantain, held by some allergists to produce 3 to 4 per cent of hay fever. Goldenrod, sunflower, daisy, dandelion, have seldom reacted. Crab grass appears

to be a serious offender in this locality. The frequency with which the ragweed sensitive patient reacts to cocklebur affords an interesting example of group sensitization, both belonging to the *ambrosiaceae*. This cross group type of reaction is most beautifully seen in the case of the grasses. Advantage is taken of this fact when timothy extract alone is used in the treatment of all types of late spring hay fever.

In spite of the fact that pollen was at times very heavy in the air in Richmond this fall, our therapeutic results are believed to be the best we have ever had. Yet from various sources this has been reported as one of our worst recent hay fever seasons. No patients receiving adequate dosage failed to get satisfactory relief—all except two or three got almost complete relief. These results are attributed (1) To the use of a freshly made potent extract, kept in concentrated solution and preserved on ice. (2) To early starts in desensitization. (3) To individualization of doses. Generally speaking, two doses were administered a week, but several cases had to have daily doses, and one for a while received two doses a day. (4) To the really high total quantity of concentrated extract given (1 c.c. of a 1-100 solution was the desideratum in each case,—two and a half times the maximum dosage in the Mulford schedule. One case was worked up to 2 c.c. of the dilution). (5) Finally to co-seasonal as well as pre-seasonal treatment.

Reactions: Five patients this year experienced severe reactions, consisting of generalized urticaria, redness and weeping of the eyes, and asthma. One or two were alarming. The literature on the subject contains the reports of several fatal accidents from this cause. The reactions we have had this year also point to the necessity for extreme caution in preliminary testing, careful graduation of dosage, the prudence of having adrenalin always at hand, and the hazard of allowing patients to carry on their own treatments.

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IODINE FAST HYPERTHYROIDISM—A PROBLEM IN THE TREATMENT OF GOITER.*

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Chemistry of Thyroid Iodine Compounds

Medical history records no more interesting chapter than that dealing with iodine and its relationship to goiter. Courtois discovered iodine in 1812. Straub, of Berne, was quick to suggest that it was the active principle of sea sponges and other medicaments which had been used therapeutically for thyroid disease from early times. Coindet in 1820 isolated iodine from the thyroid and made some effort at its rational use as a drug. Prevost in 1849 and Chatin in 1851 first hypothesized lack of iodine in food as a cause of goiter. Chatin went so far as to administer iodine in salt as a prophylactic to school children, thus anticipating the work of Marine and Kimball by sixty-five years. A more exact chemical knowledge of the state of iodine in the thyroid began with Baumann who in 1895 isolated iodothyrin as the iodine component. Almost concurrently Oswald separated from the gland, thyroglobulin, an iodine containing protein, and nucleoproteid, non-iodine containing.

Kendall in 1914 isolated thyroxin and subsequently determined its structural formula as trihydro-4-5-6 triiodo-2-oxybetaindolpropionic acid. In conjunction with Plummer it was determined to be the active principle of the thyroid gland. Quantitative physiological chemical methods show that the amount of thyroxin in the tissues of an adult averages 14 mg. There is a daily exhaustion of 0.75 mg. Under normal conditions a shift of 1 mg. of thyroxin is followed by a shift of the basal metabolic rate of 2 to 3 per cent. One mg. of thyroxin is contained in 15 grains of desiccated thyroid.

Effect of Iodine on the Thyroid Gland and Goiter

From animal experimentation we learn much that is illuminating but at the same time confusing. Halsted in 1884 found that partial removal of the thyroid in dogs was followed by hypertrophy of the remaining portion. Later he had difficulty in confirming his experiments. Else has shown that in dogs after lobectomy,

*Read by title at the sixty-second annual meeting of the Medical Society of Virginia in Roanoke, October 6-8, 1931, and by invitation before the Rockingham County Medical Society in Harrisonburg, Va., October 19, 1931.

regenerative changes in the gland are complete in three or four weeks if iodine is given. Otherwise excessive hyperplasia occurs. Mosser, also working with dogs, found that iodine stimulates the cells to produce colloid, which, upon distending the acini, flattens the cells. Prolonged iodine administration produces an exhaustion of the gland with degenerative changes in the cells.

Loeb on the other hand found that in guinea pigs, potassium iodide instead of diminishing the activity of the thyroid, stimulated it to activity. Here the colloid, instead of becoming thicker and hard, was rendered soft and the cells became enlarged. Mitoses were more frequent. Thyroid extract and anterior pituitary substance were found to inhibit this hyperplasia. Breitner from his summary of experimental evidence concludes that iodine always works against the normal "functional direction" of the thyroid gland. If it is poor in colloid, iodine enriches it. If there is excessive colloid, iodine causes its diminution.

Marine has shown that iodine is necessary for thyroid function. When the store of iodine in the body falls below normal, the gland responds by hyperplasia. Iodine administered under such conditions causes a regression with return of the cells to a normal resting condition. Upon feeding iodine to dogs, the thyroid colloid becomes hard, the epithelium compressed and flat. In dogs hyperplastic goiters are transformed into colloid resting goiters. Desiccated thyroid and thyroxin act similarly.

The normal human thyroid apparently is affected by iodine in a manner similar to that of the dog but discrepancies in reports show that this statement cannot yet be accepted with finality.

In colloid goiter the iodine effect is a diminution in the volume of intra-acinar colloid. It becomes harder and thicker. Thus the total volume of the goiter is diminished.

Plummer in 1922 marked an epoch in the history of thyroid disease, when he showed that the administration of iodine in early diffuse hyperplastic (exophthalmic) goiter almost uniformly brings about improvement. It reduces, at least temporarily, the basal metabolism and other evidences of toxicosis. Marine, Caylor, Giordano, Graham, Cattell, Rienhoff and Lewis have described the histologic changes accompanying the regressive process in the gland. The acini become distended with solid, hard colloid, infoldings are to some extent obliterated and the epithelium flattened. The connective tissue is increased. Hellwig denies most of these changes, finding that the hyperplasia persists, and merely the consistency of the colloid changes. DeCourcy and others feel that the regression in symptoms follows the increased intra-acinar pressure of the colloid, in consequence of which the secretion of thyroxin is impeded. Plummer and Kendall feel that in diffuse hyperplastic goiter an abnormal chemical variant of thyroxin (an incomplete molecule) is at fault. Iodine acts by converting this agent into thyroxin. Likewise, these authors claim that hyperfunctioning adenomatous goiter presents essentially an excessive secretion of normal thyroxin.

From the beginning, Plummer maintained that hyperfunctioning nodular goiter was resistant to iodine and that the prolonged administration of Lugol's solution to non-toxic adenomas might light them up to toxic activity. This is in accord with the admonition of Kocher many years ago that iodine given patients with nodular goiter would produce a condition of hyperthryroidism which he called Iod-Basedow. I will not enter into the subject of the involution concept of hyperthyroidism as advanced by Rienhoff, Cattell, Graham and others. This attempts to prove that exophthalmic goiter and hyperfunctioning adenomatous goiter are different phases of the same disease. Its relation to the iodine problem is of no great moment, as with few exceptions nodular goiter when hyperfunctioning does not respond well to iodine medication. If it does, the chances are that diffuse hyperplastic disease is also present.

Indications for the Use of Iodine in Treatment

We find that at the present time iodine therapy in thyroid disease can be administered with four clinical objectives: in the prenatal, juvenile and adolescent prophylaxis of colloid and adenomatous goiter; in the treatment of adolescent colloid goiter; in the pre-operative and post-operative management of exophthalmic goiter; and possibly at times in the treatment of persistent and recurrent hyperthyroidism after operation.

In general, we may say that the prolonged administration of iodine in the treatment of any type of goiter in adult life is contraindi-

cated and not without danger. Especially is this true in the case of nodular thyroid disease. The use of iodine in the goiter of pregnancy is a moot point. It should certainly be given with caution, especially during the latter part of gestation, or one will encounter the danger of aggravating hyperthyroidism. In spite of the fact that these principles are repeatedly enunciated by writers on thyroid disease, we find them over and over again violated in daily general practice.

Iodine Fast Hyperthyroidism

Plummer early taught that iodine in exophthalmic goiter did not effect a cure. While the lowering of metabolic rate, the diminution of tachycardia, of nervousness and tremor, and increase of weight and strength, which accompany the iodine involution, may persist for weeks or months, the iodine regression pathologically and clinically is never complete. Residual areas of hyperplastic tissue sooner or later becomes hyperactive and the patient suffers an exacerbation of symptoms. When this occurs, we find that the patient has become tolerant to iodine and that its administration is not accompanied by the striking results noted during the first period of application. To use a term introduced by Jackson, the patient has become "iodine fast."

Occasionally we encounter frank exophthalmic goiter which is irresponsive to iodine. In other cases the response is relatively slight. Likewise, long standing exophthalmic goiter which has undergone repeated exacerbations and spontaneous involution loses its iodine sensitivity more and more with each flare of toxicity. The longer the duration of the disease, therefore, the more likelihood of the occurrence of iodine fast hyperthyroidism. Especially is this true if the patient has been treated with repeated courses of iodine in various forms. As we have mentioned above, pure toxic adenomatous goiter is irresponsive to iodine and thus may also be classed as iodine fast. The clinical management of hyperfunctioning nodular goiter and iodine fast exophthalmic disease is not dissimilar, but in this paper I shall deal only with the features of the latter group of cases.

Clinical Features of Iodine Fast Goiter

These iodine fast thyroids constitute possibly the greatest problem today in treating goitrous disease. Hyperthyroidism has usually been present for a long period of time with many intervals of crisis and remission. In the nodular types a non-toxic condition has existed on an average of sixteen years, when an insidious tachycardia, gradual loss of weight, and a moderate degree of nervousness tell the patient that something is wrong. In many instances there is a history of prolonged and repeated iodine administration. In cases of frank exophthalmic goiter this at first brought about amelioration of symptoms but at a later date the beneficial effect of iodine could not be obtained. The basal metabolic rate is frequently lower than it was at an earlier epoch in the disease. However, the smoldering fires of this prolonged hyperthyroidism have gradually brought about cardiovascular and visceral changes from which complete recovery is difficult to obtain. In these cases we frequently meet cardiac enlargement, decompensation with auricular fibrillation, nephritis, hepatitis (at times with an ominous jaundice), and extreme mental instability. Often there is marked disproportion between the various components of hyperthyroidism. For instance, the basal rate may run low or even normal but cardiac instability and nervousness are extreme. The post-operative reaction may be utterly out of harmony with the basal rate and, in predicting what this reaction will be, we must pay more attention to the general physical condition of the patient than to any single laboratory finding. Certain of the cases of "apathetic thyroidism" which Lahey has described may belong to this group. General weakness and marked fatigue are prominent features and may go with a fairly well maintained weight.

In treatment, the resources of the surgeon, internist, anesthetist, and nursing staff must be zealously coordinated. We are certain to encounter most of the hazards that faced us before the introduction of iodine therapy. During the past few years I have had to deal with twenty-three cases of such iodine fast hyperthyroidism, not including those cases classed as hyperfunctioning or toxic adenomas unassociated with hyperplastic goiter. These latter perhaps should have been included also, but, as I attempt to follow Plummer's classification, I have purposely avoided including them. Thus the cases presented, granting that the differential diagnosis has been properly made, are for the most part instances of long standing "trained goiter" or Graves' disease.

The thyrotoxicosis in these patients was estimated as moderately severe in thirteen and very severe in ten. There were twenty women and three men, their ages varying from twenty-two to sixty-two years. In five cases we were forced to operate with a basal rate above 50 per cent, this after long treatment. In most instances it was over 40 per cent. A few patients presented metabolic rates much lower. Many of them fluctuated up and down with successive readings, refusing to become stabilized during the pre-operative period. Even the patients with low rates presented such features in the post-operative course as to arouse apprehension in an extreme degree.

Iodine was routinely given in pre-operative treatment. At times there was a definite lowering of the metabolic rate (less than 15 per cent in eleven cases) but the cardiovascular and neurological features of hyperthyroidism seemed to be as a rule affected to a lesser degree. Fluctuation of the metabolic readings as noted above was remarkable at times and in two instances the rate was raised to a higher level during iodine therapy. The question is raised as to how long one should persist in iodine medication in these cases. I have had no fixed course but have gained the strong impression that if the beneficial effect of iodine is not obtained in three weeks, its further usage will be of no avail. Intravenous iodide of soda was tried in two refractory cases without appreciable effect. Likewise, increase of the dosage of Lugol's solution beyond the usual 40 to 50 minim daily dose was unattended with benefit.

Ligation has been practiced in five cases as a preliminary to lobectomy. No benefit from this was noted but I have felt that it gave me an opportunity to estimate the reaction which might be expected from lobectomy. Hemilobectomy as advocated by Lahey, Hertzler, Jackson and others was done in a few instances, the second lobe being removed successfully after an interval of several weeks. In three cases the patients did so poorly on the table that operation had to be interrupted, the wound packed with acriflavine gauze and secondarily sutured.

Radiation according to the history had been used in six cases before coming under observation. Furthermore, we had X-ray treatment administered to three cases in an effort to lessen the hyperthyroid state. In neither instance was definite benefit noted.

The general plan of treatment has consisted of prolonged bed rest, isolation from visitors, the avoidance of excitement, a high carbohydrate diet, and the precordial application of the ice-bag. In spite of Plummer's admonition against the use of digitalis, I have up to the present continued to use it. This is done with caution and it is not given until twenty-four to forty-eight hours before operation, provided the heart is compensated. Digitalis certainly has little effect on the pulse rate, but it may increase myocardial tone and control post-operative fibrillation to some degree. Massive doses may mask the real condition of the heart and can produce a type of intoxication which adds to the hazard of the post-operative crisis.

The patient is kept in ignorance of the time of operation. We now use sodium isoamytal (nembutal) with morphine and atropine as a preliminary narcotic. Many patients with this treatment have no recollection of the operating room. Local infiltration anesthesia with novocaine, supplemented if necessary with nitrous oxide, is then used. Operation should be performed quickly and precisely. Hemostasis is all important as these patients stand blood loss poorly. Difficulties have been encountered here, as we frequently have had to deal with a gland which has the consistency of hard cheese and oozes profusely. The electric knife may ultimately solve the problem of the control of bleeding but from reports in the literature, such as that of Jackson, one is impressed with the increased incidence of secondary hemorrhage. Gentle and careful application of clamps and suture will usually control gross bleeding at operation and we have found small acriflavine packs of distinct benefit in taking care of minor oozing after suture of the capsule. Transfusion may have to be resorted to but has the hazard of a possible reaction which may tilt the balance against recovery.

The patients of this group almost uniformly went through operation nicely, but it was the post-operative crisis which gave us grave concern. The pre-operative pulse rate of all was notably unstable and in nineteen cases averaged at bed rest over 100 per minute. In nine, it was over 120 per minute. Eight patients pre-operatively had periods of fibrillation which were controlled with difficulty by digitalis or quinidine treatment. All of them ran a pulse of 120 per minute for some days after operation. In eleven cases the rate exceeded 150

per minute and in five it reached 170 or became uncountable. Fibrillation occurred in ten instances during the second and third days and in five persisted to some degree for a period of a week. The benefit of digitalis again is open to question, but I have felt that it has had some value and has not at least been harmful.

Hyperpyrexia has been a variable feature. Four patients had temperature elevation to 105 degrees or more. In ten the fever passed 103 degrees, while in only two cases did it fail to rise to 102 degrees. Six patients developed definite delirium during the post-operative course, while most of them showed a marked degree of nervous instability.

I have been impressed with the fact that patients with iodine fast hyperthyroidism recovered more slowly over a period of days from their post-operative reaction, as evidenced by the pulse and temperature curve, than those who had pre-operatively made the classical remission on iodine treatment.

During the post-operative period iodine is further administered by mouth and rectum. Morphine should be given in sufficient amount to keep the patient quiet. Fluids in abundance are given by mouth, subcutaneously, and by rectum. I avoid intravenous therapy if possible for the fear of an occasional reaction. Ice-bags are routinely applied. If extreme hyperpyrexia occurs, an ice pack, consisting of eight to twelve ice-bags flanked around the patient, has been of definite value in lowering the temperature several degrees. The pack is removed when the temperature is around 103 degrees or if the patient shows any untoward symptoms attributable thereto. Recently we have used the oxygen tent and shall use it again as it seems to be of distinct benefit, especially if there is dyspnoea, cyanosis, or other evidence of cardiac embarrassment. I have not for reasons mentioned above used glucose intravenously in these cases. Rogers feels that there is poor mobilization of glucose in the body during the post-operative crisis. Likewise, I have had no experience with the intravenous use of thyroid residue, thyroxin, or sodium iodide. Isolated instances of their possible benefit in this form of intoxication are noted in current literature.

As to end results, no deaths from lobectomy were encountered. One patient, a desperate risk with indeterminate elevated metabolism and who remained in a state bordering upon crisis over a period of months, was subjected to ligation as a last resort. This woman presented in extreme degree all the features of the iodine resistant group. She died several days following ligation. The clinical course of the remaining patients, all of whom recovered after lobectomy, has been generally satisfactory. Two had mild persistent hyperthyroidism. One of these gradually improved on iodine therapy. The other required a second operation but obtained relief. Another patient had a mild recurrence of hyperthyroidism but this subsided after several months of rest. Iodine was given but it is difficult to evaluate its role in the treatment of such cases. With these exceptions the basal rate and general symptoms of thyrotoxicosis have uniformly subsided. However, I am impressed with the fact that many patients of this group still show some degree of cardiac instability and are prone to periods of nervousness. They seem slightly under par when compared with those patients with exophthalmic goiter who were operated upon after a favorable response to iodine before operation. Eleven patients who had definite cardiac hypertrophy before operation still present some degree of cardiac enlargement. One recalls the teaching of Lahey that the goiter heart is largely the heart of over-work hypertrophy; that thyrotoxicosis brings about little specific pathologic change in the myocardium. The stimulus to overwork being removed, such a heart may readjust itself toward normalcy in a remarkable degree. My own experience with these few cases of prolonged hyperthyroidism tends to confirm this view. Most of these patients have been restored to a fair degree of health.

However, in three instances nephritis and hypertensive cardiovascular disease have persisted, and one patient died of nephritis two years after thyroidectomy. Another died of myocardial decompensation two years after operation. Her basal rate had been normal but her cardiovascular system never readjusted itself.

In conclusion, iodine fast hyperthyroidism presents a difficult problem when encountered in its more severe forms. So far as treatment is concerned, the surgeon is called upon to use all of those assets which served to cut down the mortality from operation ten years ago, a time before Lugol's solution became popular with the profession and iodine in kitchen salt

popular with the layman. This phase of thyrotoxicosis can be prevented if the surgical removal of nodular goiter is advocated before it has become toxic and if the family physician will refuse to administer iodine to adults with goiter, exophthalmic or otherwise, unless he does so after the surgeon has been consulted and operation at an early date decided upon.

Certainly there are those who will take exception to this view as being too radical. X-ray undoubtedly in many instances of Graves' disease causes amelioration of symptoms and even cures. In mild or transient exophthalmic goiter even iodine may effect a cure in isolated cases. Hyperthyroidism may burn itself out and on prolonged rest may occasionally undergo spontaneous cure.

However, I believe, the surgeon still offers most to the thyrotoxic with least ultimate hazard. Medical measures place upon the physician the burden of proving after long maintained cooperation of his patient that the cure is complete, permanent, and not an involution of partial degree. When symptoms do recur, as all too frequently happens, the likelihood is that the thyrotoxicosis will be found iodine fast.

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GASTRIC CANCER.*

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DEATHS—REGISTRATION AREA OF UNITED STATES

	1925	1926	1927	1928	1929
All Causes—Total	1 219,019	1,285,927	1,236,949	1,378,675	1,386,363
Cancer	95,504	99,833	103,578	109,770	111,569
Cancer of stomach and liver	34,874	35,694	36,874	38,128	37,915
Diseases of the Heart	191,226	209,370	211,976	237,849	245,244
Nephritis (acute and chronic)	99,320	103,332	100,163	108,813	106,056
Cerebral hemorrhage and softening of the brain	87,064	90,832	91,001	99,624	100,061
Pneumonia (all forms)	96,432	107,597	87,230	112,195	106,597
Tuberculosis (all forms)	89,268	91,568	87,567	90,659	88,352

Age group 45-65 years	1925	1926	1927	1928
All Causes—Total	293,368	313,146	308,758	344,121
Cancer	41,730	43,328	44,431	47,115
Cancer of stomach and liver	15,013	15,177	15,403	15,914
Diseases of the heart	57,842	63,125	64,404	71,796
Nephritis (acute and chronic)	31,808	32,814	31,943	34,717
Cerebral hemorrhage and softening of the brain	26,329	27,506	27,493	30,303
Pneumonia (all forms)	18,073	20,254	17,120	21,970
Tuberculosis (all forms)	18,980	19,851	18,894	20,114

From the above we see that in 1929 cancer is second in mortality, and cancer of the liver and stomach represent about one-third of all cancers.

GASTRIC CANCER AND GASTRIC ULCER

Statistics show that 3 per cent to 5 per cent of all autopsies reveal healed or unhealed gastric ulcers. Three per cent of 120,000,000 = 3,600,000. According to these figures, we have 3,600,000 gastric ulcers in the United States.

We have about 38,000 annual deaths from cancer of the liver and stomach in the registration area of the United States. From these figures, if all gastric cancers originate from gastric ulcers, we have about 10 per cent of gastric ulcers degenerating into cancer.

Many surgeons claim that 20 per cent of gastric ulcers become cancers.

The initial stage of ulcer is a devitalization of a cell or cells.

Cancer is characterized by division and multiplication of cells. One is the destruction of cells, the other an abnormal growth of cells.

Gastric ulcers may occur at any age, but the majority occur between the ages of twenty to forty.

Gastric cancers occur more frequently after the thirty-sixth year.

We find more gastric ulcers in women than men, and more gastric cancers in men than women.

Cancer is the most important and most dreaded problem that confronts the gastroenterologist. It kills more people than all other diseases of the stomach, it is constantly increasing in all civilized countries, it is the most difficult disease to diagnose in its early stages and, unless diagnosed early, treatment is only palliative.

Location. — Rehfuss believes that three-fourths of all gastric carcinomas involve the pylorus, antrum and lesser curvature. This opinion seems to be concurred in by practically all writers on the subject.

Many *causes* of gastric cancer have been suggested, though no specific cause has been found. Trauma is accepted by most writers as a contributing cause.

All pathologists agree that gastric ulcer is the starting point of many gastric cancers.

McCarty says that he has never found epi-

*Read before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, October 6-8, 1931.

thelial rests that could be scientifically stated as prenatal. He thinks that the gastric cancer cell arises from the intraglandular hyperplastic cells of the mucosa, and represents a malignant end change of the process of hyperplasia of the normal cells. He also claims that in 70 per cent of chronic peptic ulcers, cells can be found resembling cancer.

We have seen many cases giving a clinical history of gastric ulcer that extended over a period of years, with weeks of activity and months of rest, with a recent flare-up of gastric symptoms and a well-defined mass in the epigastrium—a typical clinical picture of gastric cancer. This is suggestive if not conclusive evidence that an ulcer was the cause of the cancer.

Again, we see cases of gastric cancer with rapid development and no clinical evidence of previous peptic ulcer.

Pathologists have practically proven that cancer begins in a normal cell in an abnormal environment.

So far as we know, there is no limit to the growth of a cell fed by a favorable medium, except the resistance offered by surrounding objects.

Trauma (mechanical, chemical, thermal) can change the environment of a cell and may contribute to an alteration of the pH of the surrounding medium. We are still in the dark as to a definite cause.

Symptoms.—It is hardly necessary to dwell on the symptoms of gastric cancer. As we generally see them, they are too far advanced to hope for a cure.

Rehfuss advises an annual X-ray of the gastro-intestinal tract for every one after reaching the cancer age. This is good advice but the majority of people cannot afford the expense. If this could be done most gastric cancers could be diagnosed during the rest period and cured by surgery.

All gastric ulcers should be re-rayed after two weeks treatment. If they do not show marked improvement after two weeks an operation should be considered. This is our only hope of decreasing the mortality with our present knowledge.

The symptoms in brief are:

1. Nausea.
2. Gastric pain and distress.
3. Regurgitation and vomiting.
4. Gastrorrhagia, hematamesis, melana and occult blood.
5. General cachexia, emaciation, and mass in epigastrium.

At present we know of no laboratory or clinical test by which we can diagnose gastric cancer in its incipiency except the X-ray, and until a defect in the gastric contour can be demonstrated by the X-ray this method also fails to reveal the presence of multiplying cells. Of course if there is a defect it may not be cancer, and this question must be worked out by exclusion.

We are still hopeful that bio-chemistry will some time find the solution of early diagnosis.

Treatment.—"Surgery and radiation at the present time are the only responsible, available measures for the treatment of cancer, and with them the very best we can hope is to cure one-third of all cancer cases, obviously a confession of failure." (Ellice McDonald's address before the American Phar. Assn., Philadelphia, April 14, 1931).

Dr. Horsley says, "If removal of so-called precancerous lesions elsewhere in the body is a good policy, this should be eminently a proper procedure in ulcers of the stomach that do not respond readily to competent medical treatment."

Dr. McDonald outlines the basis of the work being done in the cancer Research Laboratories Graduate School of Medicine, University of Pennsylvania:

"In consideration of alteration in cellular reactions, the environmental phase is of the greatest importance because alterations in this phase determine the reactions of the cell, and through this phase must go any influence, excepting radiation, which will prevent the cell division or cure cancer.

"In our laboratories, we have shown that in general cancer blood plasma there is a relative alkalinity amounting, in untreated internal cancers, to a change from normal pH 7.38 to pH. 7.47, or approximately 18.7 per cent more alkaline. These changes of pH may seem small to the chemist but they are enormous to the biologist.

"The more alkaline the blood plasma pH of the untreated patient, the quicker the disease kills.

"Cancer patients have relatively more sugar in their blood than normal, and, generally

speaking, the more sugar in their blood, the worse is their expectation of life.

"Cancer cells have relatively less calcium than normal and relatively more potassium, and, with increase of potassium content, there is an increase of the virulence of the tumor, or the virulence of the tumor is (in part, at least) a function of the potassium content. In our own laboratories, we have often found that, in spontaneous mouse tumors, calcium salts have an inhibiting influence on the growth of tumor.

"With these few facts, we can begin to state the direction in which research must tend. In order to have a cure of cancer, conditions must be produced which will: (1) alter glycogenolysis toward normal from the cancer type; (2) produce conditions of biological equilibrium towards normal from the alkaline state (pH 7.47 in internal untreated cancer blood plasm); (3) reduce the high blood glucose; (4) produce a calcium-like effect; (5) reduce or prevent the postassium-like effect.

"The criteria are few, but at present these are the sole criteria for a cancer cure and the future will lay down more and more specifications until these become so obvious to some genius, who will say that with those speci 'cations the answer can only be one thing to satisfy all the requirements."

He predicts that some time we shall have a chemical cure for cancer. I wish here to thank Dr. McDonald for his reprints and for the valuable work he has done and is doing in cancer research.

Though we know the case is hopeless, there is much for the physician to do.

Local care of the stomach, lavage when necessary to remove accumulation in the stomach, and antiseptics to reduce fermentation and infection, should each be borne in mind. Dietetics, remembering the fact that gastric function is generally below par, is an important consideration.

Drugs should be used to meet symptoms as they arise, such as nausea, flatulence, heartburn, constipation or diarrhea.

Pain may be controlled by hot applications or suppositories, the hypodermic when necessary.

Physicians still have a responsible mission in making the last days of the hopeless victims more bearable. Let us make them as comfortable as possible, relieve every unpleasant symptom that we can, cheer them as much as is within our power, and as the end approaches do not let them suffer.

204 *East Franklin Street.*

DISCUSSION

DR. J. SHELTON HORSLEY, Richmond: I think this paper is most timely, because of the fact that cancer is decidedly on the increase. There are several reasons for that, but we have not time to go into them. One obvious reason is that the expectancy of life has increased, and more people are getting into what Dr. Harvey Cushing calls the "tropic of cancer" than heretofore.

As Dr. Burke tells you, there are over a hundred thousand deaths from cancer every year. For every death there are probably three other cases. Of this enormous mortality, which we view with considerable complacency, about one-third is from cancer of the stomach and liver. There are two forms of treatment for cancer—surgery and radiation. In cancer of the stomach surgery alone is indicated. The only cure for cancer of the stomach is partial gastrectomy. The first thing is to make an early diagnosis Any person upwards of thirty-five years of age, particularly a man who has "indigestion," should have a thorough examination by a competent radiologist if his family doctor cannot find the cause and relieve his symptoms in two or three weeks. I say "competent" advisedly, because a "half-baked" radiologist is worse than none in a case of this kind. If there is chronic indigestion or "stomach trouble" it should be cleared up in the same way.

About one-fourth of all gastric cancers apparently come from a peptic ulcer of the stomach or from some benign lesion that has previously given symptoms for a good many months or years. It is this type, while in the minority, that demands particular attention because the lesion can often be removed by excision before cancer occurs. Ulcer of the duodenum practically never turns into cancer, but gastric peptic ulcers may become cancer. Just what proportion of gastric peptic ulcers develop into cancer it is difficult to say, but every experienced pathologist acknowledges that this does occur. Sometimes it may be years before cancer develops from an ulcer, but why wait for this to happen? If a gastric ulcer cannot be cured or markedly benefited by medical treatment within a few weeks it should be excised. In this way we could certainly help that type of cases in which there have been prolonged symptoms before cancer occurs.

In three-fourths of gastric cancers the symptoms appear suddenly. We know that elsewhere in the body cancer never arises from perfectly healthy tissue. There is always some lesion, such as an ulcer, a point of chronic irritation, adenoma and papilloma, from which it springs The proctologists tell us that their examinations of the rectum and sigmoid show that many adenomas or ulcers in this region become cancerous. In the stomach there is a large silent area where a lesion may exist without causing any symptoms whatever unless there is hemorrhage, perforation, obstruction or peritonitis. Only along the lesser curvature of the stomach or in the pyloric region would a benign lesion be likely to cause symptoms. If we had a wart on the back of the neck and it was not inflamed or did not bleed we would not know it was there unless someone told us about it, and so there may be these benign lesions in the silent area of the stomach that exist for years with-

out giving symptoms until they break down into cancer.

The important point in cutting down this terrific mortality rate from cancer of the stomach is to make an early diagnosis and to have the growth excised as early as possible. There is no known cure for cancer of the stomach except excision.

Saltzstein and Sandweiss reported 365 necropsies on patients who died from cancer of the stomach in Detroit, and have shown that about one-third of all deaths in that city from cancer were from gastric cancer, and that about one-fourth of these gave a prolonged history of symptoms. One of the chief causes of death from cancer of the stomach is perforation and peritonitis, and, according to Dr. Margaret Warwick, who reported necropsies from the University of Minnesota on 176 cases, *at necropsy 23 per cent of the cases showed that the disease was still confined to the stomach.* Of course some of these were in inaccessible regions, but as cancer most frequently occurs along the lesser curvature and in the pylorus, most of these cancers might have been surgically removed. In Saltzstein and Sandweiss' report there were only *7.7 per cent of the cases operated upon for removal of the cancer.* This is impressive when we see from these statistics that 23 per cent of the cases showed at death no metastases outside of the stomach, and then that only 7 7 per cent have been operated upon for excision of the cancer.

Early diagnosis and partial gastrectomy are the only means by which we can cure cancer of the stomach, and every symptom of either chronic or recent indigestion in any one past thirty-five years of age should be considered seriously until its cause is definitely cleared up.

NOTE.—Dr. Horsley illustrated the above discussion with lantern slides.

DR. CARRINGTON WILLIAMS, Richmond: I think Dr. Burke has brought before the Society a very important subject. He has discussed the situation very thoroughly, and there are only two points I should like to add to what he has said. Those are, first, the symptoms of the disease, because on the basis of the symptoms must lie our diagnosis of the condition. The second point that I should like to make is in regard to the treatment of cancer of the stomach. As Dr. Burke has said, if you have a typical picture of cancer of the stomach, the chances are that the disease is so advanced that no treatment is worth while. So we have to look for the earliest symptoms. I have recently reviewed the cases of cancer of the stomach that have been under treatment at the McGuire Clinic for a period of years and found that only 15 per cent of the cases are removable. Of those cases, in almost half of them the first symptom was upper abdominal pain. Often there was no relation whatever to the intake of food, but they felt discomfort or pain of no typical character. But epigastric pain was the first symptom complained of in over half of them. The next symptom was rather vague indigestion, and then weakness. Those three symptoms were the ones complained of first. Accompanying these are almost invariably loss of weight and secondary anemia. So, if we expect to get these cases early enough to cure them, we must rely upon close clinical observation.

Now, in regard to treatment. There has been a great controversy about ulcer of the stomach and cancer of the stomach. You will find some people, Dr. McCarty, of the Mayo Clinic, is one, who say that propably 70 per cent of cancers of the stomach arise on the base of benign ulcers. On the other hand, some observers say no cancers arise on benign ulcers. But I see no reason why we can not almost conclude from those observations that malignant lesions can develop from benign lesions. If that is the case, then an ulcer that does not yield to treatment in a reasonable time should certainly be referred to the surgeon for removal. I do not think we should be discouraged by symptoms indicating an inoperable lesion, such as a mass in the epigastrium, etc. I remember one case of that kind operated upon by Dr. McGuire fifteen years ago, and that man is living and well today. Of course, you will not have many cases like that, but occasionally you will, and if you save even one it is worth while.

GERIATRICS.*

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In the beginning allow me to state that I do not feel that this paper touches upon a subject that has not been written about and recognized as a separate branch of medicine.

My purpose is to call your attention especially to this branch of medicine, believing firmly these three points: first, that errors in diagnosis and treatment are those of omission and not of commission; second, that with this branch of service in mind, a certain group of our patients will be better understood, diagnosed, and treated; and, finally, that we, as physicians, seeing the results, will incur more pleasure from our practice.

Geriatrics is defined as that department of medicine which treats the diseases of old age. It is not my intention to hold strictly to this definition but to include an understanding of the normal state of the aged both physically and mentally. Then, if we classify the period of old age as extending from sixty to one hundred, we should include a pre-geriatric group from forty through fifty-nine, during which period we should aim to establish a normal philosophy of life in which old age is rationally considered and evaluated. It is during this period that a rational attempt should be made to guide the patient so that a mode of life may be outlined which will permit him to sidestep the physical and mental hazards of old age. This mode of living will not alone produce a longer life-span in years but will aid materially in increasing the likelihood of his being both self-supporting and an active influence for good in his community.

As a basis for my remarks on this subject I have reviewed the first 2500 cases admitted to the Northampton Accomac Memorial Hospital with which I am associated. In review-

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Suffolk, Va., December 2, 1931.

ing these cases general principles will be stressed rather than minute details.

Taking the first 2500 admissions to the hospital and the 509 out-patients seen for examination at the request of physicians during the same period, the following facts are noted: there were 576 in the geriatric and pre-geriatric groups. In other words, one-fifth of the total number of cases, or one-fourth of the cases admitted even when the ear, nose, and throat department was excluded, were in these groups. Of the 509 out-patients seen, 135 were in these groups, again over one-fourth of the cases seen. These figures have been stated to bring out the frequency with which patients above forty years of age have been seen in hospital work, and, if these patients form such a large part of referred work, is not the statement justified that in private practice with its far-reaching field of activity they form a group proportionately large? Surely from a numerical standpoint they justify consideration as well as from the standpoint of good to the patient.

The first group considered will be those "forty to sixty," the pre-geriatric group. It is by working with this group that we may prevent many diseases of old age and prepare to treat those conditions that are inevitable. We may bring about the understanding of old age with its flagging desires and progressive fatigue as a normal phase of life to which all must inevitably yield. We may secure for them an uninterrupted continuation of their mental and spiritual evolution, while other functions are weakening, so that they may maintain the standing achieved during maturity rather than become economic encumbrances.

In the white females in this group, the outstanding conditions were gynecologic. Of 179 cases examined, thirty showed diseased cervices. While this condition is not often complained of *per se*, the relation of the condition of the cervix to the body as a whole is an important one. When diseased and symptomless it has been found to be a focus in rheumatism and neuritis, the cause of indefinite malaise, and loss of average vigor; it has been the cause of backache, and weight and discomfort in the pelvis. The discharge with its constant irritation has been the exciting factor in nervous breakdowns. The discharge has created a cancer-phobia which has caused untold mental strain in cases which have suffered for long periods before being examined. Some feared that all diseases of the cervix are cancerous. By early treatment we know, incidentally, that a great deal can be done toward the prevention of cancer of the cervix and by early examination many cancers of the cervix may be discovered while they may yet prove subject to successful treatment.

There were fifty-two diagnoses consisting of perineal lacerations, pregnancies, hemorrhoids, fibroids, pelvic inflammations, gonorrhea, cystoceles, rectoceles, hydatidiform mole, ovarian cysts and fecal impactions, making a total of eighty-two cases of the 179 in which a gynecologic and rectal examination proved to be essential.

Twenty-three diagnoses related to the cardiovascular-renal syndrome; sixteen had diseased tonsils; ten suffered from vasomotor instability; nine had appendicitis; eight had gall-bladder diseases. The out-patient cases showed no different findings except that menopausal conditions were more prevalent. The colored females from forty through fifty-nine showed an increase in the number of cases of malignancy and lues.

In the 112 admissions of white males from forty through fifty-nine years of age, cardiac, genito-urinary tract diseases, appendicitis and accidents were most frequent. Of the fifty-three colored males of this group the predominating cause for admission was accidents. Lues, hypertrophied prostate, appendicitis, hypertension, and myocardial failure were the other out-standing conditions.

The forty-nine white males from forty to fifty-nine seen as out-patients brought forward conditions which, I believe, are best illustrated by a review of two cases.

J. L. W., was seen March 24, 1930, having been referred for examination by an ear, nose and throat specialist. White male, forty-seven; manager for a lumber company and hardware store.

Present Illness: Cough for a week; worse at night; two attacks each night; has slight sore throat and headache over eyes at times; very small amount of expectoration.

Past History: Pneumonia fourteen years ago. Cardio-respiratory: moderate shortness of breath; heart "flighty and jumpy." Gastro-intestinal: appetite poor. Genito-urinary: negative. Lost six pounds in last week.

Examination: General development fair. Head and neck: no pathology. Chest: Lungs

—few scattered rales between scapulae. Circulatory System: apex in fifth interspace nine cm. from mid-sternal line. Pulse seventy-two per minute. Blood pressure 120 over 80. Rate, rhythm and volume equal and regular; tone fair; no murmurs. Abdomen and Back: no pathology. Reflexes normal. X-ray of lungs negative for active tuberculosis. Laboratory work completely negative, including three examinations for tuberculosis.

The history of this patient from his family and personal acquaintances reveals that he had looked so badly for the past month and had such a harsh, brassy cough that they feared tuberculosis. Personally it was known that for the past six months he had been under a severe business strain. He admitted that for some months he had taken off two half days a week spending them hunting or golfing. He had enjoyed these sports five years ago but recently these strenuous short vacations had not made him feel any better.

He was advised to go alone to Florida and there to rest and just do nothing. He did this and returned symptomless and completely negative to examination. He has followed a less strenuous life with two weeks of restful vacation this year and is in splendid condition.

The point that I wish to bring out by this case is that what this patient needed was an adjustment to his age. At first it was hard for him to realize that two weeks of idleness in restful surroundings was needed rather than two weeks of vigorous duck shooting. He had to be shown that his body at forty-seven was in good condition if treated with due regard for its flagging energy.

The second case is that of a white male aged fifty-one, seen March 2, 1931. His occupation was clerical. His chief complaint was insomnia. Had had a pain in the back since January, 1931.

Past History: Influenza in 1918 and 1931; has not felt well since.

Family History: Cardio-vascular-renal tendency.

Present Illness: Head and neck negative. Cardio-respiratory system: moderate shortness of breath on occasions; more pronounced with excitement; palpitations worse when patient awakes at night. Gastro-intestinal: negative except for pain in right lower quadrant at times. Genito-urinary: nocturia once.

Personal History: Patient gets to thinking about business after 3 or 4 A. M. Has gained about twenty pounds in last ten years.

Examination showed teeth in poor condition. Circulatory system: Pulse—extra systole; heart—tone fair; no murmurs; apex fifth interspace ten cm. from mid-sternal line; blood pressure 142 over 100. Abdomen, back and extremities negative. Blood shows N. P. N. 46.2 mg. per 100 c.c.

It was known that this patient worked long hours at his office with no recreation. His diagnosis was dental caries with an early cardio-vascular-renal syndrome and nervous instability. It was suggested that he take a vacation and follow it with regular moderate exercise and develop a hobby. Since that time he has been seen socially on various occasions. He has not followed any of the suggestions. He is continually feeling worse and is more restless. He is undoubtedly driving his body physically and mentally to the point where it will collapse.

And now we come to the second large group of patients—those over sixty years of age; those in "the resting age." All down through history the aged have had few defenders and death has been pushed out of sight and thought with loathing and horror. This is certainly true of America where we have received as part of our heritage the record of the futile quest of Ponce de Leon for a fountain of youth. The following portions of a poet's account of this quest expresses to me this age-long despair and frustration:

"I girded my loins with cloth of gold,
My life was before me; my youth to hold.
I consecrated myself to the truth,
Of the secret of life, of the search for youth.
Till I came at last to the Everglades
Beneath whose skeleton moss grown shades
Somewhere the fountain of youth is hid.
I traversed each foot of the secret ground,
But the fountain of youth I never found,
I lost my quest, and my youth as well,
My strength and sureness. At last I fell."

Since the days of the Spanish conquerors there has been a great advancement in scientific knowledge and philosophy. We now realize that old age and death are inevitable and normal. We see ourselves instead as part of a great evolutionary scheme, each playing a small part which, when it has been completed, may be closed contentedly, knowing it has been a worthwhile unit in the advancement of the species.

Of the one hundred ninety-eight cases

from sixty to a hundred years, eighty were while females, ninety white males, seven colored females, and twenty-one colored males. There were fifty-three out-patients seen as follows: white females, fifteen; white males, thirty-seven; colored females, none; colored males, one.

In the white females of this group the two most common diseases were malignancy and diseases of the cardio-vascular-renal system.

In connection with the white females of sixty to a hundred I wish to present the case of Mrs. X. X., age seventy-nine, seen March 24, 1929. The admission note was as follows: Patient referred by Dr. X with a history of having had a growth removed from the face many years ago. Approximately a year ago she had a radical breast operation for cancer at another hospital. This had healed satisfactorily. Patient, after returning home, had had repeated spells of vomiting blood and passing blood by bowel. Has had terrific hemorrhages and has been in a critical condition for many months. Has not had a satisfactory bowel movement for three weeks. Patient very thin, cachectic, and anemic. Fatal prognosis has been given family. Detailed history and physical examination confirmed the admission note. The examination also showed a round hard mass in the lower left quadrant of the abdomen. A rectal examination revealed many large fecal impactions. Approximately twenty of these were removed with very little hemorrhage. The laboratory reports were as expected.

To make a long story short, on June 23, 1929, this patient was able to walk out of the hospital. One of the most important phases of her treatment was a change in environment and mental stimulus. I remember when first seeing the patient in consultation in her home, the house was darkened, the room dreary, and her hopes gone. In the hospital she was placed in a ward with its bustle, its comradeship, and its hopes and anticipations for return to active life. The student nurses became attached to her, took an interest in her appearance, joked with her, flattered her, and made her feel that she was included in the scheme of life. On June 5, 1930, after approximately a year of activity in her home neighborhood she had two large hemorrhages and died three days later. Yes, a fatal prognosis from the beginning, but, I believe, she and her friends enjoyed her last year of life as much as any other.

In reviewing the ninety white males above sixty, the outstanding conditions were hypertrophied prostates, myocardial failure, diabetes, apoplexy, accidents, malignancy, uremia, and nervous instability, placing cardio-vascular-renal disease and hypertrophied prostates as most common. These cases bring out the great importance of a routine examination of the prostate in view of early treatment and also because of its tendency to act as a focus of infection.

There is one more case I wish to cite because it illustrates that the diseases of old age are not necessarily fatal and that patients may be returned to activity and independence.

Mr. J. T., aged sixty-eight, a produce broker, was first seen by the surgical service on September 23, 1929. His chief complaints were itching, jaundice, chills, and fever. Had been itching for past forty hours. About eighteen months previous he had marked jaundice and itching, with chills and fever. Had been better since April. Stools were constipated at times; color varied. Urine varied in color. On examination the patient was found to be thin and emaciated and looked older than his age. The only positive finding was that the liver extended three fingers below the costal margin. X-ray revealed pathological gall-bladder. The laboratory findings were negative except for a mild hyperacidity. It appeared at that time that the condition was due to gall-bladder pathology and a month's medical treatment was advised. This patient had been diagnosed as maligancy of the gall-bladder several months before and it must be stated that he surely looked the part.

On October 7, 1929, he was again admitted with his condition unchanged. Under local operation a distended gall-bladder and stone in common duct were found. Post-operatively he had a severe uremia but by November 28, 1929, he was able to be discharged. Since then he has rapidly recovered, he travels from New York to Florida on business and is in splendid condition.

If this paper has renewed any interest in this subject, it will have served its purpose. May we look forward to the day when Browning's philosophy will become a fact:

"Grow old along with me—
The best is yet to be."

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RECENT DEVELOPMENTS IN PROSTATIC SURGERY.*

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The advancement of prostatic surgery to its present high state of efficiency and safety marks one of the most notable of the many achievements that have signalized the development of the field of urology within the past quarter of a century.

When one pictures a debilitated old man, toxic from renal insufficiency, unstable from cardiac imbalance, and cursed with an incessant urge to rid himself of urine he cannot completely expel, he recognizes a patient pathetically in need of aid and yet singularly unable to withstand the shock of any violent therapeutic remedy.

To take this tottering figure, who, of course, represents an extreme, but yet common, degree of disability fortunately not expressed by every victim of prostatic disease, and carry him securely through the stress of a drastic surgical procedure, sending him eventually forth with a new and happy lease upon his dwindling life, is indeed an event of major significance,—seemingly an impossible task. It is precisely this, however, that urology has accomplished to an extent that, barring a certain inescapable mortality, has brought the promise of comfort and renewed health to thousands of otherwise hopeless and utterly wretched individuals.

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The steps by which this achievement was ultimately realized are of the utmost importance. Recognition of obstruction to urinary outflow as the vital factor in the problem and of the prostate gland as the source of that obstruction came promptly. The issue seemed clearly defined. If, by one means or another, the gland were removed there would be no obstruction and the patients would become well. The gland was, therefore, forthwith removed in many instances but the patients did not get well. Most of them died. It now became painfully obvious that other factors of deep significance had to be weighed. Many bitter lessons were learned but from them eventually was written one of the most brilliant pages in surgical history.

Upon that page the act of prostatectomy was reduced to its proper and relatively minor place in a program that embraced the patient as a whole. Sharply defined and of outstanding consequence in that program was a scrupulous regard primarily for overtaxed hearts and especially for distressed kidneys. When these could be readjusted the prostate itself could be considered but not until then. The actual surgical procedure became now but one of a series of incidents in a general process, first of rehabilitation and then of maintenance upon the newly established level until finally the patient could shift safely for himself. In other words, pre-operative preparation and post-operative support assumed a position of commanding importance, and to them is due in every respect the real credit for the results finally attained in this department of surgery.

It is necessary to keep this fundamental fact constantly in mind, not only in reference to the historical backgrounds of prostatectomy but also in reference to the newer developments to which attention will be directed later. The effects of prostatism are acutely local but essentially remote, and the surgical approach has to be made accordingly. Such a patient may enter the hospital with any degree of disorder from slight vesical distress and small residual urine to intolerable agony and total retention. The patient's immediate concern is to be rid of his symptoms; the surgeon's ultimate concern is to be rid of the hypertrophied prostate gland which is producing the symptoms by strangulation of the vesical outlet. The first will be temporarily accomplished by some form of artificial drainage; the latter by any procedure that may be elected, provided it is efficient—open operation, punch, electrocoagulation, or the intra-urethral resection which constitutes the chief subject of this paper. Between these two stages lies the danger zone where the surgeon will tread but lightly and always, if he is wise, accompanied by a skilful internist. In this zone the essence of the task will be realized. A careful study of all the vital processes of this old man will be made. Kidneys which have gradually adapted themselves in some degree at least to the back-pressure of retained urine will not be shocked into total dysfunction by sudden withdrawal of that pressure; on the contrary, cautious un-

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loading of the bladder will be recognized as a primary requisite. The heart, embarrassed by renal insufficiency, will be built up if possible by rest, diet, regulated exercise, and drugs. Coincidently the digestive functions, so often disturbed by the toxic load, will begin to improve. Above all things the wear and tear of urinary distress will cease and the patient will enjoy again the blessedness of unbroken sleep and relaxation. In the meantime the surgeon will be adopting such measures as may seem necessary in the face of the urinary infection commonly also present; and by cystoscopic, urographic or other means of his election will be disclosing any additional pathology in the form of renal or vesical calculi, diverticula, tumors, etc. Regular blood-pressure records, charts of the urinary output, blood counts, estimations of the blood chemistry, fractional studies of the dye output will be added to the all-important general clinical behavior of the patient in completing a picture which finally—perhaps after weeks or months—informs the surgeon either that he dare not undertake operation at all or else that the patient has slowly but steadily mounted to a new level from which direct attack upon the prostate may now be reasonably undertaken.

Assuming that the latter is the case, and it is usually so, the question of the best method of attack then becomes the consideration of the moment. With certain significant reservations that will be noted later it has been until now generally conceded that prostatectomy or total removal of the hypertrophic mass was a clear-cut indication. Urologic surgeons have been almost solidly united upon this point and have differed only in reference to the avenue of approach to the gland. One group, led by Hugh Young, have steadfastly held to the perineal route; another, comprising probably a majority of the profession, have preferred a suprapubic attack. Both groups have with unanimity recognized the operation itself as secondary in importance to the preparation therefor, and both have consistently adopted the principle of careful and prolonged preliminary drainage. Whether this drainage was effected by means of indwelling catheter or suprapubic cystostomy was a detail left to the preference of the individual operator. Both groups succeeded from the common ground of preliminary treatment and diligent post-operative care in reducing mortality and morbidity to a low level and the figures offered by either so nearly approximated those of the other that the choice between the two was a toss-up usually decided by the habit of the particular operator into whose hands the patient happened to fall.

There seemed nothing left, therefore, than a perpetuation of the argument between the two camps with both so solidly entrenched that there was absolutely no hope of the dislodgment of either. Now and again some refinement of technique was debated, such as suture of the vesical neck after prostatectomy or primary closure of the bladder without drainage. But in the main the prostatic problem seemed solved with nothing else of consequence to be said beyond the annual barrage as between the advocates of the perineal route on the one side and those of the suprapubic route on the other.

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Now with dramatic suddenness the picture has changed. The contention between the two groups described above becomes a matter of no further interest in the presence of a force, not new and yet revolutionary, which puts both of them sharply upon the defensive. This force is represented by an intra-urethral attack upon the prostate, substituting a minor for a major surgical procedure, and having for its object the removal of only the obstructing portions of the gland and the restitution of normal function with little or no danger and with greatly abbreviated hospitalization.

The principle is actually one of the oldest in the annals of modern urology. As early as 1844 Mercier devised and used a prostatic incisor which, however, was complicated by considerable hemorrhage. Thirty years later Bottini, in an effort to reduce this danger of hemorrhage, added a cautery feature which was not entirely successful. In 1900 Freudenberg, of Berlin, contributed to these instruments certain cystoscopic features of great value. In this country Fuller and Chetwood followed with the employment of the galvano-cautery for the relief of prostatic obstruction. In 1910 Beer, of New York, used the high frequency current (Oudin) for the destruction of benign vesical tumors and raised the question of its possible value in an attack upon the prostatic median bar. A short time later Stevens acted on Beer's suggestion and carried it a step further by employing the d'Arsonval cur-

rent of deep penetration and attempting its use upon lateral lobes as well. In 1914 Luys, of Paris, developed the so-called forage of the prostate, tunneling the gland with the galvano-cautery. Shortly before this time Young presented his ingenious punch for the obstructive median bar without any reference to true prostatic hypertrophy. Since then various instruments have appeared from time to time, including the Caulk cautery punch, the Collings electrotome, the Braasch-Bumpass punch, the Day punch, and the highly efficient Kirwin punch.

As a result of these efforts certain possibilities began to define themselves. It became quite evident that the obstructive median bar could be specifically handled with either the electrotome (Collings) or the improved punches, especially those giving perfect vision and preliminary coagulation of tissue to prevent hemorrhage. So effective are these instruments that over-enthusiasm has developed and many unnecessary "punches" are being made into bars of inflammatory origin that would yield to simpler measures, as observed by this writer and pointed out emphatically by Von Lackum, of the Mayo Clinic, and others.

The application of electro-coagulation with the penetrating high frequency current to the reduction or destruction of obstructing prostatic masses has not met wide acceptance, and yet its possibilities are very considerable, if cases are properly selected and if the modality is employed with judgment and without timidity. Here and abroad a few urologists have followed the lead of Stevens and found it of distinct usefulness. The writer is among this number. In a small but interesting series of cases extending through several years I have effectively relieved localized prostatic enlargements by this means alone.

Finally, the punches, originally designed for the median bar only, were turned by some venturesome urologists toward the much more difficult lateral lobes also. Striking and sometimes unexpected success met some of this effort, especially when the lobes were small or of modest size. The present day refined punch is an instrument of great ingenuity and in the hands of the writer has been of great service in various instances.

We have withheld a report of these cases in order to develop a series of respectable proportions and to observe late results. As it now begins to appear that the resectoscope may supplant the punch, it is possible that this report may never come to light. It is appropriate, therefore, to state at this time that our experience fully confirms the claims made for the punch by others; that we have been led to more and more frequent use of it in frank prostatic hypertrophy of the lesser grades; and furthermore that our experience coincides in several cases with that of Engel and others —namely, that the obstructing element is usually the median lobe, a satisfactory attack upon which will not uncommonly be followed by complete relief, though definitely enlarged lateral lobes be left untouched.

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When all was said and done, however, and when a reluctant recognition was won for a conservative attack of this sort on the lesser degrees of prostatic enlargement in selected cases, there remained untouched and apparently untouchable, except by radical surgery, the gross mass, sometimes as large as a fist or larger, which, by general consent, could be assailed by no such puny methods.

A lone voice in the wilderness disputed this contention. John Caulk, of St. Louis, a surgeon of great skill, yet began deliberately to abandon radical surgery on the prostate and to preach the doctrine that if a sufficient amount of tissue was removed with a punch from lobes, however large, the obstruction would be relieved by this procedure plus the shrinkage that would occur in the remainder of the gland as a result of the drainage and relief of congestion thereby effected. This assertion which, with rare courage, Caulk repeatedly thrust before the profession, was received with respect but with skepticism sufficient to deny it any large following. Finally, while his colleagues were quietly awaiting Caulk's realization in late results of the error of his way, the St. Louis urologist came forward with the bold and astonishing announcement that in 85 per cent of all cases he was finding his method thoroughly efficient. Today this pioneer witnesses a complete vindication of his judgment in the spectacle of a movement in his direction that is approaching the dimensions of a stampede.

The latest evolution of prostatic surgery to which we now come in chronological progression does not bear the name of Caulk but it

is founded squarely upon the doctrine he has so ardently and consistently preached. To Davis, of South Carolina, and McCarthy, of New York, will go the credit of giving it the finishing touch. Adopting the principle of the loop electrode, proposed in 1926 by Maximilian Stern, of New York, and later discarded because of imperfections in the instrument which carried it, these two men have brought about what must, whether willingly or not, be recognized as a revolution. McCarthy is a urologist of note whose work has been quiet and unobtrusive but significant; probably it would eventually have won considerable, but not general, acceptance. Davis was unknown to the profession; his work has been spectacular, and the manner in which he has stormed the country, meeting ridicule with overwhelming rejoinder and ultimately, by force of tireless energy and abounding faith, winning not only respect but admiration, will remain an epic chapter in the history of urology. With the great fortresses of urologic surgery arrayed against him he stands, nevertheless, a victor upon the field and has accomplished nothing less than something resembling a rout of forces that seemed impregnable. There should be no stinted recognition of what this South Carolinian has done. Whether or not one relishes the thonght of the wane of prostatectomy he should gratefully and unequivocally extend to Davis the great and lasting credit that is his just due.

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The minute technical details of this operation of intra-urethral prostatic resection will be of greater interest to the practical urologist than to this audience. Only enough will be said of it here to give some comprehension of its meaning and scope. The procedure of Davis is built around the direct vision resectoscope of Maximilian Stern which Davis has improved to the point of making it a thoroughly workable and dependable instrument. His electrical unit is likewise an adaptation of one (Bovie) in previous existence. It is evident that Davis possesses a great deal of native mechanical ability. From time to time he has altered his working tools to suit his wishes and has only recently brought them to their present state of efficiency. McCarthy, on the other hand, operates through the widely-known for-oblique pan-endoscope which bears his own name and in the development of an electrical unit called upon the genius of the Wappler house; the latter discarded all precedents, attacked the problem from a fundamentally new angle, and has now produced a cutting-coagulating current with distinctive characteristics.

In the hands of both the radio-loop of Stern, enlarged, strengthened, and accurately controlled by a rack and pinion mechanism is the actual operating element. The instrument is passed to the bladder and the prostatic urethra, distorted by hypertrophic masses, is brought under full inspection. The electrode is then swung into the field and the loop allowed to rest against the tissue to be removed. The current is now switched on with the foot and the loop immediately becomes a vital cutting blade. With the rack and pinion it is made to travel through the tissue against which it lies and the instantaneous result is a gutter-like excavation for the extent of its excursion. Coagulation, either simultaneously or by another switch of current while the loop is returned in the reverse direction, controls bleeding. The bit of tissue is removed by withdrawal of the working parts, the latter are replaced, and the process is repeated many times until the protruding gland has been whittled away. Finally, the urethra is seen to be thoroughly "revised" and once more becomes a widely-open passage for the outlet of urine. The amount of tissue that may be thus removed is impressive when the scraps are assembled at the completion of the operation. The extra-urethral portion of the gland, often a large mass, remains undisturbed for the time being but subsequently undergoes marked shrinkage. The clinical results are almost immediately evident. A retention catheter is left in the bladder for two to four days. Upon its removal the patients are usually able to void freely. Minor complications may cause delays but as a rule patients are out of the hospital within a week.

Untoward post-operative events may occur, as with any surgical procedure, but generally speaking they are of small consequence. If hemorrhage is properly controlled at the time —and this is an imperative obligation of the operator—it will rarely occur subsequently and will then be amenable to further electro-coagulation through the urethra. Infection and sepsis are possible but the sealing of tissues by the electric current reduces this eventuality to a minimum. Epididymitis will be prevented

here, as in prostatectomy, by preliminary ligation or resection of the vasa deferentia. The dangers of cardiac and renal collapse will be lessened by the smaller tax upon the patient of this minor procedure and will be further guarded against by careful preliminary preparation. Upon this latter point additional emphasis is necessary. Resection of the prostate, though technically complicated, is a much simpler surgical procedure than prostatectomy and will, therefore, in all likelihood be applicable to cases in which radical operation is impossible. But it must be distinctly and unfailingly understood that they aim at the same result—the emptying of a bladder previously unable to discharge its normal function in this direction. The two procedures differ, but the outcome is the same; so is the patient. No less is he the dilapidated old man pictured at the outset of this review, and if he is approached without due circumspection he can be killed with a radio-loop as well as with a scalpel. Here, as in formal prostatectomy, preliminary preparation, though it may perhaps be considerably shortened, occupies a position of paramount importance. It will be easy to overlook this essential fact and to sally forth casually with this new instrument. If so, disaster will with certainty follow and the lesson taught by previous sad experience in relation to prostatectomy will, in relation to prostatic resection, be learned again at the expense of many lives.

* * *

It is too early yet to attempt any precision in a consideration of indications, limitations and final results. Whether intra-urethral resection will be applicable in nearly 100 per cent of cases, as claimed by Davis, or in 30 or 40 per cent of cases, as predicted by some others, only time will tell. The same is true of results. For the time being they appear to be remarkably good. If recurrence develops, the same relatively simple operation may be repeated, and even at that will not entail the stress of prostatectomy. Furthermore, prostatectomy itself is not without its recurrences, contractures, overlooked nodules, and tags of tissue requiring secondary procedures. The matter of more remote recurrence is not of great moment to an old man who does not expect to live long enough to encounter it. Other factors will also enter into the estimation of results. The procedure is described as simple but this latter word must be interpreted in the light of masterly experience and dexterity in intra-urethral manipulation. Inadequately trained cystoscopists will contribute a chapter of poor results and some fatalities. Many glands that need no operation at all will be attacked, especially by a few heedless non-operating urologists who now picture an opportunity to enter a field from which they were previously excluded. On the other hand, some accomplished urologic surgeons will use the resectoscope for a time, possibly in some instances with resentment, and will quit it with disrespect because it is time-consuming, troublesome, and taxing upon the patience of the surgical mind. Finally, it must be realized that the apparatus itself is not perfect. Further improvements are certain to be made and with them will come improved results.

Out of this maze of skepticism, which is gradually being broken down; of over-indulgence, which is threatening to become of large dimensions; and of thoughtful, conservative, constructive work, which is now quietly but effectively being done in certain quarters, will eventually come a true measure of the situation. The issue will eventually lie, as it should, in the hands of the highly trained and open-minded urologists of the country. They will be slower to speak but more impressive. When this authoritative voice is finally heard, I believe it will establish intra-urethral resection as the procedure of choice in a large majority of prostatic enlargements, displacing the punch and reserving the present standardized operation of prostatectomy for exceptional cases, especially the very large and very vascular glands. Such a prediction is, in a sense, itself an exhibition of excessive enthusiasm since it is made in advance of the demonstration of personal results over a reasonable period. It is given, however, in response to a request for the expression of an opinion at this time and it will be modified as often and as extensively as may be dictated by future events.

MYOCARDOSIS.*

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Within the past several years the use of the term myocardosis has gradually increased. The cardiovascular diseases, probably more than any other branch of medicine, have re-

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ceived an unusually large number of new terms, most of them expressions of more recently discovered facts. New instruments, new procedures, new methods of examination, have all contributed to this advance. Concise and exact terminology is important to each of us in our continual studying, and the reason or reasons for the conception of any new term should be weighed thoroughly before accepting an addition to an ever increasing vocabulary.

The term myocardosis was coined by Dr. David Riesman to cover those cases of chronic myocardial failure in which the signs of inflammation were lacking. The important role played by the aging process of man and the normal physiologic breakdown in the cardiovascular structures during the middle and advanced age period has been shown by workers such as Cohn, Herrick and Cabot, to vie in seriousness with the distinctly inflammatory diseases of the heart. There is a distinct contrast between the degenerative changes present in individuals reaching middle life, and the true diseases of the heart and blood vessels. In other words, the differentiation of the wearing out process and the alterations due to disease has become a special problem for the clinicians of today.

The loosely used term "chronic myocarditis" has been applied to all of these various types of cases. Many objections have been raised against the fact that the term myocarditis includes such a multitude of conditions. It does not stand for accurate diagnosis.

It does not convey to us any exact clinical or pathological picture either in conversation, on a hospital record, or on a death certificate. Myocarditis as a clinical diagnosis has wrongly included many other conditions in which degenerative changes, fibrosis, and atrophy have occurred without actual inflammatory process. In the attempt to diagnose heart disease more accurately the term myocarditis is being widely abandoned in large part. There is a distinct need for a word expressive of the real underlying pathologic changes in the big broad class of degenerative myocardial weakening, as distinguished from inflammatory heart disease. The term myocardosis would seem to cover the ground particularly from a clinical viewpoint.

Let us think of myocardosis as including those cases of chronic myocardial disease which lack any inflammatory signs or symptoms. The term will bring clinical and pathological thought closer together. The diagnoses myofibrosis and myosclerosis, and other terms of pathological nature are merely attempts at closer correlation betwen clinical and purely post-mortem findings. It is not possible, however, to diagnose these purely pathological conditions except in the pathological laboratory, although we should have, and have in the term myocardosis, a means of designating that we feel the condition to be degenerative in character.

From a pathological viewpoint the term should be ably supported. Quoting from Delafield and Prudden, "It is believed by most modern observers that the new connective tissue which develops in the heart in connection with atrophy of the muscle fibres, as a result of impaired nutrition due to a narrowing of the lumen of the coronary arteries or to other causes, is not, in the stricter sense, inflammatory in its nature but is rather a fibrous hyperplasia, the new-formed connective tissue forming secondarily to replace the muscle fibres which have atrophied. Nevertheless, we still for convenience call the lesion myocarditis, thus implying inflammation." It is because of the indefiniteness of the term myocarditis that this subject is an important one.

In the office or hospital or at the bedside we cannot hope to make an exact pathological diagnosis of either the inflammatory or the purely degenerative type of cardiovascular disease. As a matter of fact, in the degenerative type of myocardial change it is possible that no microscopic lesions will be made out, or that only small portions of the heart will show definite pathologic changes. With it clearly established in our minds by means of proper terminology whether the changes are, or are not, the result of inflammatory processes, it should be possible to form a mental picture of the possible pathologic condition of the heart which would help greatly in reaching a diagnostic conclusion. This clearly formed in each cardiovascular case stands for better transfer of ideas as well as a more definite basis for diagnosis and treatment.

Various investigators have conceived certain terms to express this thought. Christian, for example, speaks of non-valvular heart disease. Riesman conceived the term myocardosis and has given it able support. Hyman and Parsonnet, of New York, have elaborated on it. There is clearly a need for some such term.

There is no exact analogy between this term in its relation to myocarditis, and the Epstein term nephrosis in its relation to nephritis. The term nephrosis was first introduced by Von Müller to designate histologic changes in the kidneys which manifested themselves in a primary degenerative process of the tubular epithelium. This is in contradistinction to the inflammatory changes in the interstitial tissues and glomeruli known as nephritis.

One great factor in the causation of degenerative changes is the actual starvation of the myocardium. Other factors include age, amount of physical exertion, etc. Impoverishment of any muscle will detract from its efficiency. Many of us are using hypertonic glucose solutions intravenously in a variety of conditions and we are familiar with the excellent results obtained. In the case of an impoverished myocardium the use of glucose is based on a long series of experiments. These show that there is a consumption of dextrose in the circulating fluid of the artificially perfused human heart and in the mammalian heart, that the presence of an increased amount of glucose in the perfusion fluid is very favorable for the work of the heart, and that the excitatory action of adrenalin is prolonged by it. Other experiments show that the addition of insulin to the perfusion fluid accelerated the removal of dextrose from it in the isolated mammalian heart, and that this extra sugar does not disappear by combustion. Still other experiments show that the volume of the heart is reduced by adding glucose alone as well as insulin alone, and by either action its efficiency is increased. From these conclusions the effect of glucose on the myocardium can be stated in a general way to increase the mechanical capability of the muscle. It is important to note that neither insulin nor sugar has any action on hearts already working efficiently.

Starvation of the myocardium manifests itself in pellagra, indirectly causing the cardiovascular symptoms associated with this disease. Heart muscle starvation is also part of the picture in the severe anaemias or any of the wasting diseases.

A majority of the cases of chronic myocardial disease are degenerative in character. The commonest causes of myocardial degeneration are the chronic vascular diseases, namely, general arteriosclerosis, sclerosis of the coronaries and aorta, syphilitic endarteritis and chronic hypertension. Opinions differ as to the relative importance of these several conditions. Generally speaking, they keep the myocardium from obtaining its proper nourishment and a destruction occurs with formation of new fibrous tissue and scars. Hypertension causes hypertrophy of one or both ventricles with extensive dilatation. The continued excess resistance against which the heart must work impairs its nutrition and interferes with the removal of the waste products of its activity, which leads to degeneration.

Advanced myocardial degenerative disease produces definitely the common symptoms of heart failure, or myocardial insufficiency. The outstanding manifestation is the circulatory deficiency and stasis, which, in turn, is directly responsible for most of the symptoms, such as dyspnea on exertion, exhaustion, edema, cough, and impairment of digestion. Except for pain and palpitation the symptoms are not usually referred directly to the heart. The symptoms that are referred directly to the heart are due to myocardial exhaustion.

The diagnosis of these advanced stages of myocardosis are rendered more simple because of certain diagnostic instruments of precision as well as through the more careful cardiovascular history and examination due these patients. These advanced cases are easily recognized by the average physician. They have proper diagnosis and up-to-date therapy established, with a happy prolongation of the case in some instances. They, furthermore, are usually in some definite category of late degenerative cardiovascular disease and, consequently, have the name of that particular condition applied to them and not the indefinite term myocarditis. Late myocardosis, as distinguished from early myocardosis, describes these cases excellently. It is not for them particularly that the term myocardosis was coined.

On the other hand, there are a large number of patients with earlier manifestations of degenerative myocardial change, who must be included in the myocardosis syndrome. Early myocardosis seems to describe very adequately these early cases of myocardial weakening or degeneration. These are the patients who present undisputed symptoms of myocardial impairment in life, but who after death exhibit hearts which are apparently normal macro-

scopically and microscopically. In these patients there has been some degenerative change during life-time, causing cardiovascular symptoms, which change cannot be found after death by any of the modern pathological methods of demonstration. This category includes those patients who suddenly drop dead from angina pectoris without previous warning, as well as those who give a long history of cardiovascular disease. Some of these are the patients in whom physical examination does not elicit any sign of disease of degeneration. Even after a searching cardiovascular survey, including laboratory, electrocardiographic and X-ray procedures, we must report such a patient as being normal. One of these patients may sooner or later suffer a severe cardiovascular breakdown, and without regard for his physician as a prognostician, pass quickly out of the picture.

Since thorough examination renders no assistance in the diagnosis of many of these cases, the question resolves itself into a proper valuation of the earliest manifestations of cardiovascular damage. Most important among the early symptoms are the three symptoms described by Kaufmann, of Vienna, known as Kaufmann's triad. He describes these three cardinal symptoms as not only leading in frequency but also as being the earliest to appear in a patient's history. By using care in eliciting all the facts in a history these symptoms can be traced back for many years in some cases. The three symptoms are dyspnea, palpitation and substernal discomfort. These are familiar and important symptoms to all of us, particularly in late stages of heart disease. But as early symptoms they are even more important.

The recent beginning of dyspnea after exertion will be evaded by the average patient, but persistent questioning on the part of the examiner can determine the importance of this factor. There is no standardization test for dyspnea, because comparison of sedentary and non-sedentary individuals in this respect cannot be made by any one test. An estimate of this factor can be gained by analyzing response to habitual types of effort of any specific individual, such as walking up a certain hill, the carrying of loads, or the performance of usual daily duties. As a general rule, dyspnea should be considered as an important feature of myocardosis, and should be stressed as definite evidence of cardiac impairment unless some other outstanding cause is revealed.

Palpitation is usually described as varying from a mere awareness of the heart's activity to a painful pounding in the precordium. This second symptom of Kaufmann's triad is clearly a subjective one. The patient must have the ability to describe it properly and completely. It must be distinguished from the heart consciousness of emotional origin and from misinterpretation of gastrointestinal symptoms. Palpitation occurring in any patient should demand a complete cardiac survey, and particularly should not be treated lightly in those individuals of the middle age group.

The third symptom mentioned, substernal distress, is usually the one which sends the patient to his physician. The average individual will put up with many abnormal sensations, but when pain or distress manifests itself, medical attention is sought. The degree of distress present may only be a feeling of compression or tightness. This distress or pain is invariably localized in the midsternal area rather than in the precordium. If the other symptoms of the triad are not evident to the patient the substernal distress is rarely associated with heart trouble. The heart is known to be on the left side and a mid-line symptom cannot be associated in the patient's mind with the heart. The symptom never develops from pure mental strain, or gastrointestinal irritability, as does the pain of coronary thrombosis. A diagnostic point of the substernal distress of myocardosis is that it is invariably associated with muscular effort.

I have stated that these symptoms are early ones. An important point is that they are frequently present in the otherwise normal patient. There is no inflammatory change. The change is an early degenerative one and hence the term myocardosis, or early myocardosis, if you choose, seems to fit this picture from both the clinical and pathological standpoint. It is through finding and treating these early cases that we can increase our age of expectancy and lower the mounting incidence of heart mortality. The term myocardosis should bring clearly before us the non-inflammatory picture, the result of degenerative changes of various sorts.

In the early manifestations of myocardosis

I have stated that little or no pathological evidence is found at biopsy and frequently no positive findings on physical examination are demonstrated, although certain cardiovascular symptoms have definitely appeared. In the later manifestations of myocardosis our clinical interpretation is usually confirmed by diagnostic aids, to help us form a mental picture of cardiovascular degenerative changes. In either early or late myocardosis our mental picture from both a clinical and pathological standpoint is clearer than if the term chronic myocarditis had been used.

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ACUTE APPENDICITIS IN CHILDREN.*

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This paper is an attempt to point out peculiarities in the diagnosis of acute appendicitis in infants and children. It is only by early recognition of this common condition that the present high mortality and morbidity rates can be lowered.

In a study of the diagsosis of this pediatric problem, a few notes on the development and anatomy of the appendix may be helpful.

From the standpoint of comparative anatomy, the appendix vermiformis is an undeveloped cecum. In infants and children the abdomen is normally large in proportion to the whole body and appears more so because of the small size of the pelvis and thorax. The abdomen contains not only the organs found in the adult, but also the bladder and upper end of the rectum. At birth the liver is proportionately very large, being about one-eighth of the whole body weight as compared to one-thirty-sixth in the adult. The size of the abdomen in infants and children is due to this large liver and to the presence of the bladder and rectum which have not sufficient room in the small pelvis. The colon occupies somewhat the same position that it does in the adult. During infancy the cecum may not have rotated and taken its position to the right side of the abdomen. The sigmoid with its long mesentery, instead of occupying its usual adult position in the left hypogastrium may lie transversely in the suprapubic region or over to the right near the cecum, or it may hang down in the pelvis and give rise to a variety of partial fecal impactions. Except for the subcutaneous fat, the abdominal walls are very thin. The omentum in infants and young children is small in size, filmy in consistency, and does not give the usual protection against irritation and inflammation found in adults. The umbilicus is placed relatively low. In the newborn it is approximately at the central point of the whole figure. During the sixth and seventh weeks of intra-uterine life, an elongation of the cecum takes place. This pouch remains undifferentiated and of the same caliber until the fifth month when its oral portion dilates to form the cecum and its distal portion remains rudimentary as the appendix. At birth the appendix has completed its development and is relatively longer than in the adult, while the cecum continues to grow so that the disproportion in size between the cecum and appendix constantly increases through childhood. Absence of the appendix is extremely rare except as a result of disease or operation. At birth the appendix arises from the apex of the cecum, which is roughly conical with the three longitudinal muscle bands diverging from the appendix at equal distances from each other. This infantile type of appendix and cecum may persist in about 2 per cent. of cases. Usually a development of the cecal wall takes place between the anterior and external longitudinal bands, forming a new apex to the cecum and displacing the base of the appendix to the left nearer the ileocecal valve, a type which is present in about 90 per cent. (Richardson). The location of the appendix depends on that of the cecum. If the cecum is in its usual position, the base of the appendix is most often located on its medial side, slightly below the ileocecal valve.

The walls of the appendix, especially the submucous layer, are more delicate in the young. In many children the mesoappendix is short, leaving that portion of the appendix which extends beyond it deficient in blood supply. The position of the cecum in the

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embryo is to the left of the midline near the level of the umbilicus, from which position it develops, rotates, moves to the right and then descends. A part of this relative change of position is due to the ascent of the umbilicus. In most infants and children, the situation of the cecum and appendix varies considerably from that found in the adult. It is often higher and farther toward the midline, or even projecting beyond it. In unusual instances the cecum and appendix are in an inguinal or scrotal hernia, or under the liver, or near the spleen or left kidney. In still rarer instances, there is complete transposition of the abdominal viscera. This usually persists throughout life.

The usual predisposing causes include age, sex, race, season, geographical distribution, diet, prevailing diseases, anatomical positions, and family susceptibility. Appendicitis is a disease of young adult life, the greatest incidence occurring before the age of twenty. It is rare in infancy, becomes increasingly frequent throughout childhood, reaches its maximum in early adult life, and then diminishes slowly with advancing years. No age, however, is immune. Instances of prenatal appendicitis have been reported, and at the other extreme it may occur in the ninth decade. Even in infancy appendicitis is not so infrequent that it can be overlooked. Richardson, of Boston, states that it is the commonest abdominal emergency in children over one year of age.

Males are more frequently affected than females, with a ratio of two to one. This fact is supposed to be accounted for by the better circulation in the female through the appendiculo-ovarian ligament. Possibly the greater activity of males and more opportunities for trauma may account for the frequency of the disease in this sex.

Seasonal variation is noted, most cases occurring in the spring and early autumn, next in the summer, and least in the winter months. There seems a tendency for the incidence of appendicitis to increase in epidemics of colds and influenza.

A tendency for acute appendicitis to attack members of the same family has been repeatedly observed.

The role that diet plays in appendicitis is still debated. Statistics seem to show that individuals receiving the simpler, cheaper form of diet are not so susceptible. This point is again emphasized by the fact that appendicitis in the original African negroes is extremely rare, whereas those negroes who are living in civilized communities seem to be equally as susceptible as the whites.

The determining causes of appendicitis in the order of their importance are: bacterial invasion, infectious diseases, fecal concretions, intestinal parasites, foreign bodies, and trauma. Most frequent of all bacteria concerned in lesions of the appendix is the common colon bacillus. Fecal concretions, intestinal parasites, foreign bodies, trauma, variations of the appendix such as kinks, twists, disturbed circulation and abnormal contact with other diseased structures—all tend to make the appendix more receptive for bacterial invasion.

Usually, in older children, the diagnosis of acute appendicitis can be made as readily as in adults. Two of the principal difficulties, however, are first: in children, the constitutional reaction may be so marked as to overshadow the abdominal symptoms, particularly if the appendix is misplaced; and second, frequently an acute febrile condition originating outside of the abdomen is associated with abdominal pain. The usual signs and symptoms occur in the following order: 1. Abdominal pain, 2. nausea and vomiting, 3. tenderness, 4. rigidity, 5. fever and increased pulse rate, and 6. leukocytosis.

1. The characteristic abdominal pain starts in the epigrastric or umbilical regions, occasionally in the lower abdomen, or is "colicky" over the entire abdomen. Pain precedes all other sypmtoms. In three to twenty-hour hours after onset, the pain moves downward and to the right, localizing with greatest intensity in the right lower quadrant. If pain begins in the right lower quadrant, it is usually not appendicitis. Sudden cessation and abatement of symptoms should not be trusted as true improvement, for this often indicates perforation.

2. Nausea and vomiting, or both, follow pain immediately, or one to two hours later. Constipation is usual, though diarrhea occasionally occurs, especially just before the attack, and more often in children than in adults. If nausea and vomiting precede pain, appendicitis may be ruled out and one should think of such conditions as scarlet fever, measles, meningitis, etc.

3. In 1889, Charles McBurney, a New York surgeon, described the famous "McBurney point" as follows: "I believe that in every case the seat of greatest pain determined by the pressure of one finger has been very exactly between one and one-half inches and two inches from the anterior spinous process of the ilium on a straight line drawn from that process to the umbilicus." This diagnostic sign has been of the greatest value in differentiating appendicitis from other acute abdominal conditions. No other sign in appendiciitis has supplanted this. The point of maximum tenderness in infants and children corresponding to McBurney's point in adults is in the middle third of a line drawn from the anterior superior spine of the ilium to the umbilicus. It must be remembered, however, that the point of maximum tenderness varies with the location of the appendix. Tenderness with rigidity cannot be localized over McBurney's point in more than 50 per cent. of cases of appendicitis in infants and children.

4. Rigidity of the whole right side of the abdomen, chiefly in the lower quadrant, is the rule. If the appendix is misplaced, the muscle spasm may be elsewhere. The finding of rigidity is very helpful, though its absence does not rule out appendicitis; it is difficult to determine in a crying or struggling child. Both tenderness and rigidity may be greatly diminished or altered by the administration of opiates or other sedatives, or by the prolonged application of ice.

5. Fever is present, though in slight degree as compared to the fever found in pyelitis, pneumonia, and the exanthemata. The pulse rate is usually increased out of proportion to the fever.

6. Leukocytosis of medium degree is strong evidence, but is not solely to be depended upon. The total white blood count alone may be very misleading. A differential count showing an increase in the percentage of polymorphonuclear cells is more important than the count of the total number of white cells. Recent work with Schilling's differential count, as has been brought out by W. Ambrose McGee, is of the greatest value in early diagnosis.

Inspection of the abdomen frequently reveals restricted respiration in the abdomen, especially on the right. The breathing is more costal than abdominal. The flexed right thigh, whether the child is standing or prone, may be observed. Occasionally a limp on the right side is noted.

Palpation is the most important part of the examination and by it is determined the degree of tenderness and rigidity, and the presence of any mass. Always begin palpating gently with a warm hand on the side away from the suspected lesion, working toward the epigastrium and across to the right lower quadrant. Watch the patient's facial expression during the examination. Repeated and careful palpation is essential in most cases. Cutaneous hyperesthesia, or hyperalgesia, is helpful in adults, but of no value in infants and uncooperative children.

Percussion may be useful in determining dullness in any area and outlining a mass due to indurated omentum, an appendiceal abscess, etc. Light percussion is more accurate. Too much reliance, however, cannot be placed on percussion alone.

Auscultation is of little value in appendicitis. Paralytic ileus associated with peritonitis may be suspected if active peristalsis is not exhibited.

Roentgen ray examination with an opaque meal or an opaque enema should never be done on any patient suspected of having acute or sub-acute appendicitis. The presence of barium in the intestinal tract and the necessary trauma of manipulation in fluoroscopic examination will increase the inflammation, and sometimes may even rupture an acutely inflamed appendix. It is only in a small percentage of cases of appendicitis that roentgenologic examination is of any positive value.

Vaginal examination is rarely justified in children.

Rectal examination should *always* be done in infants and children. Care should be used to avoid pain in inserting the finger. Gentle pressure of a well-lubricated, gloved, or "finger cotted" finger maintained for several seconds on the anterior portion of the sphincter ani muscle will relax it. The finger reaches much further anatomically in the rectum of an infant or child than in an adult. By this means a tumor may be felt, and abscess sometimes recognized, or tenderness localized, which could not be accomplished by palpation through the abdominal walls. Occasionally abdominal and rectal examinations should be done under a light anesthesia. In all these examinations extreme caution and gentleness

are necessary to guard against breaking up any adhesions and spreading infection.

"Signs" of appendicitis. In the literature there are sixteen or more "signs" of appendicitis that are supposedly diagnostic. Aaron's sign is a feeling of pain or distress in the epigastrium, umbilical region, or left hypochondrium, produced by continuous firm pressure with the tips of the first three fingers over McBurney's point. This sign is fairly constant. Blumberg's sign is helpful in determining active peritonitis. Sharp pains are elicited by sudden removal of the hand from the abdomen after pressure has been made. After subsidence of the inflammation, the pressure pain exceeds that made by the sudden relief. Brittain, an intern in Memorial Hospital, Richmond, Va., first observed in July, 1928, the sign that goes by his name. LaRoque feels that this sign is pathognomonic of gangrenous appendicitis in the male. He states that palpation of the right lower quadrant of the abdomen in the presence of gangrenous appendicitis invariably produces sudden retraction of the right testicle which drops to its original position as soon as pressure is withdrawn. This sign has been helpful in my experience, though it has not been pathognomonic and particularly not constant in young children. Meltzer's sign is the production of definite tenderness when pressure is made over McBurney's point, while the right leg is extended, with the patient lying flat on the back, arms elevated, and left knee partly flexed. The extended right leg is kept rigid and gradually elevated, thus impinging the appendix between the abdominal wall and the body of the psoas muscle.

Laboratory examinations: A total and differential leukocyte count should be obtained in every case of suspected acute appendicitis; however, the value of a single observation, particularly if the total white count is about normal, may lead to a false interpretation. When it is possible to perform a Schilling's differential count, this should by all means be done. Too much stress cannot be placed upon the accuracy and experience of the individual making this test. Examination of the urine should be done, although there are no characteristic changes in appendicitis. By urinalysis, complicating factors such as diabetes, nephritis, pyelitis, etc., may be determined. The finding of blood or pus in the sediment does not necessarily suggest a urinary cause for the pain, as the presence of an inflamed appendix close to the pelvis of the kidney, ureter, or bladder may result in both pus cells and red blood cells in the urine. This is particularly true of a well-advanced inflammation of the appendix in infants and children.

Differential diagnosis: Before a group of pediatricians, it would be presumptuous of me to try to discuss the differential diagnosis of acute appendicitis. Some of the commoner diseases and conditions that may be confused with appendicitis are: the exanthemata, particularly measles, basal right-sided pneumonia, pyelitis, acute mesenteric lymphadenitis, ileocolitis, intussusception, foreign bodies, angioneurotic edema, allergic conditions, herpes zoster, abdominal pain following vaccination, suppurative disease of the right hip or spine, and numerous other maladies.

The *treatment* of acute appendicitis in pediatric practice should be immediate operation. Conservative measures in the presence of a definite diagnosis are not justified. It is generally safer to operate on the grounds of a reasonably probable appendicitis rather than wait until inflammation has spread sufficiently to establish a clear diagnosis. Infants and children are more readily overwhelmed by peritonitis than adults. A careful choice of the type of anesthesia must be made; rapid and gentle surgery performed; drainage employed in doubtful cases; and immediate measures taken to combat dehydration and acidosis. Thorough cooperation between the pediatrician and suregon must be maintained not only in the diagnosis and pre-operative period, but also in the post-operative course. The services of the pediatrician are particularly helpful in watching for pulmonary complications, and in directing the diet and general care.

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St. Elizabeth's Hospital.

WORK OF THE VIRGINIA HEALTH DEPARTMENT FOR CHILD HEALTH AND PROTECTION.*

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Only a few years ago the sole activity of the average Health Department was communicable disease control with the entire emphasis on quarantine, vaccination, pure water and food, and the proper disposal of human waste. Medical schools were devoting virtually all their instruction to curative medicine, and the average physician was surprised if a patient consulted him for other than an apparent illness.

It took the World War to change the attitude of both preventive and curative medicine. When approximately one-third of our drafted men were rejected on account of physical disability, a large percentage of which could have been prevented in infancy and childhood, public health officials began to awaken to the fact that the laity needed more health education; medical schools included Preventive Medicine in their curricula; and practicing physicians began to realize they had something more to do than to cure their patients after they became ill.

The education of the laity is not a new idea to the Virginia State Department of Health; for one of the first things our beloved Dr. Ennion G. Williams did when he was appointed Health Commissioner in 1908, was to compile and publish a series of Health bulletins. From then on until the time of his last illness, one of the major methods he employed for Health Education was the health literature published not only in bulletins but in daily and weekly papers, in journals and in magazines.

The health program of the State Health Department continues to be one of education. The main objectives of the Child Health Bureau of the Virginia Health Department are:

1. That every expectant mother may see a physician for health supervision as soon as she suspects her pregnancy, and at least once after delivery.

2. That every child shall be under the care and supervision of a physician from the date of his birth.

3. That the laity be made to realize the importance of health supervision for themselves and their families and become willing to pay for advice for the prevention of disease rather than for a prescription or medicine.

4. That every one of the 2,300 practicing physicians in the State be made to realize his responsibility for health supervision as well as for curative measures.

5. That every child in the State have the advantage of a full-time health worker whose duty is to promote and correlate the above objectives.

We make use of several methods to put over this educational program. One of these is Midwife Education. Our Director of Midwife Education teaches a course of eight lessons, stressing the fundamentals of cleanliness, the danger of digital examination, the first symptoms of danger before, during, and after labor, the proper handling of emergency cases, and the importance of having the prospective mother see a physician at least once before and once after delivery. She also urges that the midwife give a copy of the bulletin on *Prenatal Care* to each expectant mother as soon as she is engaged.

When this work was first started in 1921, there were 9,500 midwives in the State. Of these our Director said: "It would be hard to describe the women who attended my first classes held in the section known as the Black Belt. They were almost without exception ignorant, superstititious and dirty. Most of them had been "called by the Lord" to do this work, and they "must have been doing it right because in a vision He had shown the way."

*Read before the Health and Medical Service Committee of the Governor's Conference on Childhood and Youth, held in Richmond, November 24, 1931.

In my own private practice I frequently saw the tragic results from placing lives in the hands of this type of midwife. The second patient I lost after I began the practice of medicine was that of a woman in labor with a cross presentation. The baby's hand had been in sight for four days, but the midwife had delayed sending for a physician as she thought it would be a reflection upon her knowledge and ability. This was the attitude of the average midwife in Virginia twenty-five years ago.

The number of midwives has now been reduced to 4,478. Of these 3,415 have had the entire course of eight lessons, and they now consider it a disgrace when a physician is not called promptly at the first sign of danger. Last year the attendance upon eighty-six midwife classes was 5,336. There are, however, approximately 1,000 midwives who have not been reached. These women, as a rule, are so scattered that it is impossible to assemble them in groups for the special course of midwife instruction.

In order to reach them, we are endeavoring to include them in the groups of women in various communities who are studying our Correspondence Course for Mothers. This group is taught by a teacher, a physician, or a lay leader, and all lesson papers from the class are sent for correction to our Director of the Correspondence Course for Mothers. The Midwife Instructor, or the local Public Health Nurse, meets with the class as often as practical, to give demonstrations that are of especial benefit to the midwives.

This method of group work serves a double purpose: The midwife is taught how to render better service to her patients, and the women of the community are taught what to demand of the midwife. During the last fiscal year, 637 of these study groups were organized with an enrollment of 4,293.

The Correspondence Course for Mothers has recently been revised and now consists of eight lessons on general health education: 1. Why Health Education; 2. Nutrition; 3. Health Habits; 4. Disease Prevention; 5. Prenatal Care; 6. Infant Care; 7. Child Care; and 8. Mental Care. These eight lessons teach mothers and other homemakers how to protect their own health and the health of their families. Especial effort is made to teach mothers how to have their children physically fit to enter school.

This course is taught entirely by correspondence, the women studying either individually or in groups. There is now an average enrollment of 3,000, and an average of about fifty complete the course each week.

During the last fiscal year, our county nurses taught 839 lessons in the Red Cross Course, *Home Hygiene and Care of the Sick*, with an attendance of the classes of 10,613.

A special nurse has been employed for the past eight months, to teach a series of ten or twelve lessons on *Home Nursing and Prevention of Disease*, to groups in counties that have no Public Health nurse. During the last eighteen weeks the attendance has averaged over 500 women a week. This service is given at a cost of approximately fifteen cents per lesson, or eight cents per hour of instruction.

During the current year the Staff of the Child Health Bureau have given to adult groups 852 single addresses on some phase of Child Health.

In 1920 the Legislature passed what is known as the "West Law" which requires every teacher to take a special course in Health education; and places the responsibility for the health of the school children jointly on the State Board of Education and the State Board of Health.

Since that time the two Departments have worked together most harmoniously, and have developed a plan of health education in the schools that is highly approved by most of the workers who visit us from other states and countries.

Our teachers are required to make a careful annual physical inspection of every school child, to detect obvious defects in vision, hearing, teeth, throat, and weight. Virtually all of them have now been taught to make this inspection and their inspections as a whole are remarkably near to being accurate. The parents are urged to consult their family physician about any defects found, and every effort is made to help them to have corrections made. The chief complaint that parents make is that teachers are over-solicitous and children are sometimes urged to consult their family physician unnecessarily—a fault which you educators will agree with me is on the right side of the ledger.

Last year there were 28,482 children in Vir-

ginia who repeated their grade and many others who dropped out of school while in the elementary grades. It will be readily understood why so many children fail when we learn that only 29 per cent of the white children in the State are now Five Point children—that is, their vision, hearing, throat, teeth, and weight meet a definite minimum standard, or have received specified medical attention

According to figures compiled by the State Board of Education for several years, the counties with nurses and health officers have many more Five Pointers than the counties that have none. In the counties with nurses or health officers, in 1930-31, of the 114,549 white children inspected, 40 per cent were Five Pointers; and the counties with no nurse or health officers had only 17 per cent Five Pointers among the 129,221 inspected.

Statistics also show that 84 per cent of our school children in counties with a nurse or health officer have been vaccinated for smallpox, while only 47 per cent have been vaccinated in counties without either. And 38 per cent of the children have been immunized against diphtheria in the first group of counties, while only 18 per cent have been immunized in the group without such helpers.

In 1927 a committee from the Medical Society of Virginia, from the State Pediatric Society and from the Division Superintendents of Schools met to formulate a plan for ultimately making every child first entering school a Five Pointer. During the past summer under this plan 4,903 children entering school for the first time were each examined in a physician's office as a private pay patient, with parents present. This is over three times as many as were examined the year before.

No curative clinics are conducted by this Department except Dental Clinics which were requested by the Dental Society of Virginia, and these clinics have resulted in a large increase of patients for the dentists. However, where curative clinics, such as orthopedic or eye clinics, are sponsored by the local Medical Society, the nurse assists when invited. Our Department does conduct in the out-lying counties T. B. diagnostic clinics, with an X-ray machine to assist the local physicians in making a diagnosis of indigent children who have been in close contact with active cases of tuberculosis. But even the X-ray examination is made only on request of the family physician.

For many years vaccination and immunization clinics have been held at irregular intervals in various sections of the State, but we are now trying to develop a plan to transfer even this responsibility to the family physicians.

There are 37 counties in Virginia that have no full-time health workers, but do have many organizations that can be induced to do some form of health work. They are looking to us to guide them in their programs. We therefore have a Field Nurse who devotes her entire time to this organization work. She helps them to organize their health committees, she assists them in making out programs for public meetings and study classes; she guides them in selecting their health projects, and shows them in detail how to develop these activities.

From the above brief outline you can see that our whole aim is to educate the laity to the value of health protection and supervision, and to place the responsibility for community health, so far as the child is concerned, upon the parents and the family physicians. Much has been done in this direction, but still it seems that the surface has barely been scratched, for even now the average person seldom consults his family physician for health supervision, and rebels at the payment of a medical fee unless a prescription or medicine is given.

We hear complaint of high taxes. Let's see if this is entirely justifiable. Is there a person in rural Virginia who would not prefer to have his gasoline tax doubled rather than to be relieved of all gasoline tax, and even have his gasoline given him, if he would have to ride over the roads of 25 years ago? Or is there a person in Virginia who would agree to be relieved of all taxes, if he and his family had to be subjected to the diseases and the death rate that prevailed in Virginia before the State Board of Health was reorganized in 1908, even if he had all of the comforts and protection, except health, that his taxes give him?

But what has been accomplished in the last few years to promote health is only a beginning. Half the diseases and deaths that now occur in people under 60 are preventable. Our great need is health education, and still more health education!

COMPLETE OUTWARD DISLOCATION OF THE PATELLA.*

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Dislocations of the patella are of rare occurrence. Winslow, quoting Stimson, says: "Dislocations of the patella form less than 1 per cent of all dislocations; and the infrequency with which they have come under the observation of individual surgeons and the incompleteness or the obscurity of the reports of many cases have combined to make the systematic descriptions rather artificial and unsatisfactory."

Outward displacement is the most frequent form of patella dislocation. The degree of the dislocation varies. The dislocation is classed as incomplete or complete, according as there is a direct outward dislocation onto the ridge of the external condyle, or beyond this ridge.

The most frequent causes of outward dislocations of the patella are:

1. Direct violence upon the inner side of the patella.
2. Sudden muscle action, especially if knock-knee be present or the external condyle be poorly developed.

In addition, Kleinberg mentions other factors that commonly predispose to an outward dislocation:

1. Laxity of the quadriceps muscle; and
2. Contracture of the ilio-tibial band and the external lateral patellar expansion of the quadriceps aponeurosis.

The capsule is torn toward the inner side of the patella, or there may be a tearing away from the patella of the vastus internus.

It is stated that the patella may be dislocated when the knee is in either hyper-extension or flexion. The following case of outward dislocation of the patella, in which the knee was in hyper-extension is sufficiently interesting to justify its report:

Report of Case

E. J. B., a white male, aged 45 years, a farmer, was admitted to the hospital October 29, 1931, complaining of pain and inability to move his right knee. He stated that while repairing the roof of a small building near his home the roof suddenly caved in, causing him to fall on to the floor, a distance of about fifteen feet. He fell in such a way as to injure his right knee, forcing it inward.

Family History was unimportant.

He gave a history of having had a pyogenic infection of his right knee four years previously. This was incised and drained. No stiffness of the joint resulted.

Physical Examination was essentially negative except for the injury to the right knee. The leg was held stiff and immobile for fear of exciting pain. On inspection of the knee anteriorly the joint appeared much flattened and wider than normal. The flattening was especially noticeable between the condyles of the femur. On palpation the patella could be easily outlined, but out of its normal position. The anterior surface was palpable and looked forward, the inner border resting on the external condyle of the femur. The outer border appeared somewhat more anterior than the inner. The patella was fixed firmly outside the anterior femoral articular surface. It was very definite that one was dealing with a complete outward dislocation of the patella, which, in the absence of trauma, was undoubtedly due to muscular violence.

The X-ray examination by Dr. C. H. Peterson was in accordance with the physical findings, showing the patella dislocated laterally and impacted against the margin of the external condyle of the right femur. There was no

Fig. 1.—Antero-posterior view of right knee.

*From the Department of Surgery, Shenandoah Hospital, Roanoke, Va.
Read before The Roanoke Academy of Medicine, December 7, 1931.

evidence of bone injury to the patella or lower end of the femur—see Figs. 1 and 2.

Fig. 2—Lateral view of right knee.

Treatment.—Attempts to reduce the dislocation without an anesthetic were unsuccessful. Under nitrous-oxide anesthesia the right hip was flexed on the abdomen, with hyper-extension of the knee. The patella was then slipped back in its normal position with ease. A plaster splint was applied posteriorly from ankle to hip, and a pressure bandage applied about the knee. This support was kept on for three weeks. After daily massage for one week the patient had perfect use of his knee.

Conclusions

This case been been presented because:

1. The injury is of rare occurrence.
2. The knee was in hyper-extension—flexion or semi-flexion being more common.
3. There were no pre-existing anatomical or pathologic conditions of the knee that could have been contributing factors in the dislocation.

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Shenandoah Hospital.

GRANULOCYTOPENIA DUE TO STREPTOCOCCUS VIRIDANS—REPORT OF A CASE.*

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Reports of cases of infection with a diminution or even a disappearance of the polynuclears from the blood stream have appeared in the literature from time to time since the first one by Brown.[1] Interest was first aroused by the publication of a number of cases by Schultz.[2]

A few of those cases in which microbic infection appeared to be the exciting cause of the granulocytopenia may be mentioned. Friedemann[3] isolated Ps. pyocyanea from the blood stream in one case. Dasse[4] found the same organism in the throat in almost pure culture. Jacobsen[5] reported a case of agranulocytosis in which the streptococcus hemolyticus was recovered in pure culture from the lesions in the rhinopharynx. A very interesting case is reported by Railliet and Ginsbourg,[6] who isolated the meningococcus from their case. Roberts and Kracke[7] report the finding of streptococcus hemolyticus in the blood stream in their case. References to additional cases may be found in the reports mentioned above.

From the lesions of the pharynx, in the case herein reported, the streptococcus viridans was present in almost pure culture, and it was present in the blood stream in pure culture.

Report of the Case

Patient, white male, aged 82, under observation for a period of eight years, was admitted to the hospital for rectal operation.

Family history of no importance.

Past history: Patient had enjoyed particularly good health throughout most of his life. Complained of frequent sore throat and head colds. He was chronically constipated, and complained for years of protruding hemorrhoids. About six years ago, patient complained of severe pain over the pericardium. A diagnosis of angina pectoris was made. No similar attack had recurred.

About three weeks before admission to the hospital, patient had an attack of grippe (?),

*From the Department of Bacteriology and Clinical Pathology, Medical College of Virginia, and Retreat for the Sick, respectively.

with marked congestion of the throat, lasting one week.

One week before admission, rectal examination revealed a large polyp. Removal of this polyp was advised and he was admitted to the hospital. He was prepared for the operation the following day, but this was postponed because examination of the blood showed a leucocyte count of 1,600, hemoglobin 75 per cent, erythrocytes 2,840,000. A second specimen showed the leucocytes to be 1,400, small lymphocytes 75 per cent, polymorphonuclears 25 per cent. Examination of the urine was negative except for a few granular casts. Patient made no complaint at this time of a sore throat, but a mild injection of the pharynx was present.

On the second day following admission (March 15th) patient complained of slight sore throat. The anterior cervical glands were palpable and tender, and there were numerous large grayish ulcerative patches on the pharynx. The leucocyte count was 2,000, with lymphocytes 48 per cent, and polymorphonuclears 52 per cent.

On March 16th the throat was worse, and the soft palate was ragged and dirty gray. There were several necrotic lesions on the anterior portion of the right pillar, marked gingivitis and one of the anterior cervical glands was the size of a walnut. The breath was very fetid. Temperature 102° F., pulse 90, respiration 38. The leucocyte count was 1,600; lymphocytes 40 per cent, polymorphonuclears 60 per cent.

March 17th and 18th, condition about the same. Leucocyte count 2,000.

March 19th, liver palpable; stomatitis more marked, with marked sloughing.

Patient had been given oral asepsis with irrigations, topical applications, liver extract, X-ray of the long bones, and one injection of neoarsphenamine.

March 20th, leucocytes 2,200, lymphocytes 50 per cent, polymorphonuclears 50 per cent, erythrocytes 3,640,000. The throat condition had become progressively worse, the skin icteroid. The patient was in a semicomatose condition; rales throughout the chest with tubular breathing. Temperature 103.6° F., pulse 110. Leucocyte count just before death was 800.

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THE OLD FAMILY PHYSICIAN, SLOWLY BUT SURELY, COMING BACK INTO HIS OWN.*

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"The mills of the Gods grind slowly, but surely."

During the last meeting of the American Medical Association in Philadelphia, according to the registration of the various sections, we find about three times as many general practitioners or family physicians registered in the Section on the General Practice of Medicine than all of the others, including all of the specialists in attendance, both those from foreign countries and in the United States.

Does not this indicate that the general practitioner, the old family physician, is fast coming back, as in the *days of Old?*

It was the happy privilege of the writer many years ago to listen to the distinguished and much beloved Dr. Nicholas Senn in his Presidential Address before a large assemblage of well-known Southern physicians of the American Medical Association in the city of Atlanta, Ga., when he made the significant statement that major surgical operation should *never* be undertaken by any first-class surgeon without first consulting the family physician of the patient, who should give all the information pertaining to the etiology and pathology of each case under consideration. In other words, withhold the surgeon's knife until the family physician passes his judgment on the advisability of a major surgical operation. The modern tendency of sending a patient to the operating room prior to making a thorough diagnosis is becoming too common of late years; hence the alarming death rate from surgery and the severe criticisms of our modern surgeons, as well as the greater dread of hospitals by those who are in actual need of hospital treatment.

I know whereof I write, having only recently lost my only son, Dr. Wm. S. K., who was operated on for gall-stone about one year ago, but owing to certain complications the surgeon

*Read by title before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, October 6-8, 1931.

failed to remove the gall-bladder, and decided to postpone a second operation for another date; hence this last operation, although seemingly simple enough, that of removing the gall-bladder alone, cost the patient's life, notwithstanding the fact that this patient was for ten weeks under the watchful eye of this distinguished surgeon and two trained nurses, besides the daily attendance of three of the leading surgeons of Washington and Baltimore. Then, I may add, the patient was in a fine state of health, so far as known, he having served two years in the World War as assistant surgeon in Mobile Hospital No. 39 with the Yale Unit. If you will pardon the digression, I would by far have preferred my son's passing away on the field of battle in an honorable fight for his country than in a hospital where the ubiquitous streptococcus is permitted to invade the sacred field of operation or in the nearby precincts whereby the deadly germ of peritonitis may thus cause the untimely death of one of the finest young Christian soldiers that was ever born.

It has been the writer's privilege to witness and take an active part in a great many major surgical operations, both in this country and in Europe, besides having undergone a very serious major operation for the removal of gall-stones in the skilful hands of our well-known, Dr. W. J. Mayo, of the Mayo Clinic. I had carried two large gall-stones for over ten years, thinking I might possibly escape the surgeon's knife by careful dieting and exercising prudence, but in this I made a complete failure, and had finally to submit to the knife. My quick recovery without the slightest complication convinces me that the most important thing to do is, first, to select a first-class surgeon, who is sufficiently skilled from a surgical standpoint to prevent complications, one who is thoroughly conversant with the best mode of sterilization and prevention of any form of germ infection, especially that much noted and fatal germ family, the streptococcus, and its half-brother, the staphylococcus. These two families of germ infection are capable of producing profound blood poisoning or septicemia following various surgical operations, when the surgeon is indifferent or ignorant of the significance of these deadly foes of humanity.

I am pleased to state that I have not suffered one single hour from the operation or otherwise since leaving the hospital over eleven years ago. And I must give Dr. Wm. J. Mayo and the Mayo Clinic all the credit for my complete recovery. Would that many other places could boast of two such wonderful surgeons and splendid men, whose kindliness of heart toward their fellow physicians is as commendable as their superior skill as surgeons. Once upon a time we could boast of our lamented, Drs. Hunter McGuire and George Ben. Johnston, who were among our leading surgeons, but, like many others of their high type of surgeons, have passed over the river to rest under the shade of the trees. Oh! that we could call back to Mother Earth a few of such men as Nicholas Senn, John Wyeth, Hunter McGuire, Arpad Gerster, Samuel Gross, etc., whose names are written high-up on the roll of honor, and should have a place in the Hall of Fame.

If you will pardon the seeming digression, I shall devote a few minutes to the subject of why so many failures in our profession in this twentieth century! May we not offer a few common sense suggestions along this line? Having been doing general practice in my humble way for nearly half a century, I feel that a few timely suggestions from one who has been in the harness this long might meet your approval. As physicians, we all need a little more business tact in our dealings with the laity from a financial standpoint. Can we not discover a plan by which to collect on delivery for our professional services as other business citizens do? Of course, we should use tact from a humane standpoint. If we cannot do a C. O. D. business, better offer a thirty day indulgence, allowing 20 per cent discount additional for cash. This plan appeals to the writer, who has tried it for a number of years with much success and general satisfaction. Besides it saves the worry of a losing game with collecting agencies and lawyer's suits. After about forty years experience, I have found that it does not pay to warrant for your pay; better give to the worthy poor than to receive. As the late Prof. Cathell states in his book, The Physician Himself, "Better not treat the devil's poor lest you can command cash on delivery."

Let us cherish the memory of our forefathers in medicine, including the old family doctor, who never presented a medical bill, but received more in honorariums than twice

the actual cash, in addition to the saving of postage and duns, besides keeping the good graces of the family, friends, relatives, etc. It was a very rare occurrence that the old-time doctor was ever dismissed or supplanted by another physician, notwithstanding the home-made pills and unpalatable solutions, castor-oil, etc., that were prescribed with the assurance that the medicines were always taken with good results. It was the writer's privilege to successfully pass as many as half a dozen of the leading Medical Examining Boards in the United States, including the mixed Boards, where he noted the antagonism existing in the various boards. I became acquainted sufficiently to be able to impart any information pertaining to the standing of each board if questioned. It was also the privilege of the writer to do post-graduate work at many of the best post-graduate schools in the United States as well as in the best schools in Europe, including those in the University of Berlin, Heidelberg, and Leipzig. He has had the honor of being one of the delegates from the United States to the First Congress on Professional Medicine held in Paris in 1900 where he read a paper before this congress entitled "The Attitude of the Medical Profession of the United States Toward Proprietary Medicines"; he was also appointed delegate by the American Medical Association to the Thirteenth International Medical Congress held in Paris in the year 1900. During my stay in Paris, I took advantage of an opportunity to attend the best hospitals in Paris and the various European post-graduate schools. These courses in Europe were preceded, however, by courses every few years in the fine post-graduate schools of the United States, such as the New York Polyclinic, New York Post-Graduate, Mayo Clinic, University of Minnesota, Johns Hopkins, etc. Since my vast experience in post-graduate study and that of passing the various Medical Examining Boards, I feel amply prepared to give information pertaining to either one of these important subjects.

In concluding this rambling paper, the writer would like to ask the question in connection with his previous inquiry—as to why there are so many failures in the profession in this twentieth century, why so many sudden and untimely deaths in our profession in this twentieth century? I may offer the suggestion, first, that the automobile and aeroplane, and the common habit of taking the so-called proprietary headache remedies, such as the cold-tar products and habit-forming drugs, including alcoholic beverages in connection with the automobile accidents, etc., are the prime causes of more sudden deaths from heart disease in the medical profession than any other of the many causes. The writer is strongly of the opinion that many of the above mentioned causes are productive of incurable or life-time nervous diseases, such as epilesy, delusional insanity, psychasthenia, hysteria minor and major, etc.

The writer wishes to apologize for the references to himself, also to his much beloved son, whose young and useful life, in my opinion, was sacrificed on the alter of unscientific surgery at the hands of one of our most distinguished surgeons, whose mind became beclouded by his strong friendship for his patient. Unknowingly, he thus permitted the ubiquitous streptococcus to invade the sacred field of operation, causing septic peritonitis and the untimely end of one of the finest characters and Christian soldiers that was ever born.

STREPTOCOCCUS PYOGENES

The stealthy germ that infects human beings, the surgeon's greatest enemy.
Malicious microscopic little mite, safely hid from view, you park,
And never wage in open fight, but stab your victim in the dark.
The bolder bugs, before they sting, at least burst forth in song,
But you do not; besides you bring your gang along, your gang along!
You lie in wait in stagnant pools, or lurk about hospital floors;
An equal foeman I could love, but you I must despise!
Because you take advantage of your *tiny, little insignificant size!*

—*B. C. K.*

Apt. 2, 1438 *Columbia Road.*

Miscellaneous

Psychiatric and Mental Hygiene Clinics.

The Directory of Psychiatric and Mental Hygiene Clinic, especially for children in the United States, compiled and edited by the Division on Community Clinics of the National Committee for Mental Hygiene, is a most interesting and informative publication. It has just been issued and shows the steady growth that

is being made in mental hygiene activities by the Federal and State governments and various agencies and institutions throughout the country. There are at this time such clinics in practically every State, the number of such psychiatric and mental hygiene clinics being about five hundred.

State Activities in Virginia

Under the supervision of the State Department of Public Welfare, Arthur W. James, Commissioner, State Office Building, are the follow institutions:

Hospitals for Mental Diseases

Central State Hospital (for colored patients), Petersburg. Hugh Carter Henry, M. D., Superintendent.

Eastern State Hospital, Williamsburg. George W. Brown, M. D., Superintendent.

Western State Hospital, Staunton. Joseph S. DeJarnette, M. D., Superintendent.

Southwestern State Hospital, Marion. George A. Wright, M. D., Superintendent.

Institutions for Feebleminded and Epileptic

Colony for the Colored Feebleminded, Petersburg. Hugh Carter Henry, M. D., Superintendent.

State Colony for Feebleminded and Epileptic, Colony. John H. Bell, M. D., Superintendent.

The total number of patients actually in all foregoing institutions at this time is about 10,000.

A department for the care of the white criminal insane, established in 1909, and one department also for ex-service neuropsychiatric patients, known as the Davis Clinic, have been developed at the Southwestern State Hospital. Similar departments for the colored criminal insane, established in 1909, and for ex-service neuropsychiatric patients are operated at the Central State Hospital.

State Bureau of Mental Hygiene

The Bureau of Mental Hygiene, William F. Drewry, M. D., director and psychiatrist, State Office Building, under the State Department of Public Welfare, was established in 1929. The Bureau cooperates with the State hospitals for mental diseases in fostering demonstration clinics at the meetings of State and county or district medical societies. The work of the Bureau includes giving lectures, addresses, radio talks, reading papers, publication of articles, especially in the Virginia Medical Monthly, and the distribution of literature.

The State Mental Hygiene Clinic, under the direction of the Bureau of Mental Hygiene, was established in September, 1928, and its service is available to the entire State. A total of 625 cases were studied during the year ending June 30, 1931. Of this number 545 were committed to the Department of Public Welfare by the Juvenile Courts of the State, and eighty were referred by local agencies. All referrals except the Juvenile Court cases were approved by physicians. Consultation service is available for both children and adults.

Community Clinics

Charlottesville

Neuropsychiatric and Child Guidance Clinic, Medical Building, University of Virginia.

Director: David C. Wilson, M. D.

Opened in September, 1929. Authority: University of Virginia, Department of Medicine. New cases examined during past year: children twenty-five; adults fifty-six.

Richmond

Children's Memorial Clinic, 1001 East Clay Street.

Director: Harvie DeJ. Coghill, M. D.

Opened in November, 1924. Authority: Board of Directors of the Children's Memorial Clinic, Inc. New cases examined during the past year: children 976.

Clinic on Nervous and Mental Diseases:

Out-Patient Department, Medical College of Virginia, 1100 East Clay Street.

Director: Beverley R. Tucker, M. D.

There are several neuro-psychiatrists connected with this department.

Opened in 1908. Authority: Medical College of Virginia.

William F. Drewry, M. D.

Laughter is the saving emotion of the human race, when genuine, for from its presence the cynic flees, the pessimist retreats, the misanthrope is driven to cover. Under its influence the sun shines in dark places, the birds bring again their choicest songs, the flowers lift their smiling faces, and the world becomes once more a worthwhile place in which to live.—*Charles E. Whelan.*

Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
PRESIDENT-ELECT—*Mrs. W. P. McDowell*, Larchmont, Norfolk.
SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
TREASURER—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

The Woman's Auxiliary to the Richmond Academy of Medicine

Sponsored a most attractive garden bridge party at the lovely home of Dr. and Mrs. J. Allison Hodges on Cary Street Road, Richmond, on May the 20th. Mrs. Austin I. Dodson and Mrs. J. B. Dalton were co-chairmen, with the following sub-chairmen: Mrs. O. C. Brunk, candy; Mrs. Harry Hinchman, chairs and tables; Mrs. Charles Llewellyn, telephone; Mrs. T. S. Shelton, tickets; and Mrs. Thomas N. Ennett, prizes. Practically all members of the Auxiliary took an active part in this benefit entertainment. There were one hundred and twenty-five tables.

The money raised will be applied on the fund for furnishing the lounge in the new Academy of Medicine Library building, now nearing completion. As the offices of the Medical Society of Virginia are to be housed in this building, it is expected that other auxiliaries throughout the State will cooperate in this movement also.

The National Meeting.

The Woman's Auxiliary to the American Medical Association met in New Orleans, La., May 9th to 14th. It was a most successful meeting from every standpoint. The President, Mrs. Arthur B. McGlothlan, presided. There were present twenty-six National Board members, sixty-three delegates, eighteen alternates, and 808 members and guests, making a total of 918 registered. There were seven members from Virginia. Twenty-eight states were represented.

The Woman's Auxiliary was the only source of distribution of *Hygeia* that showed any increase over last year, this increase being 50 per cent.

The report of the nominating committee was given. The following were declared elected unanimously:

President-Elect, Mrs. James Blake, Hopkins, Minn.; vice-presidents, Mrs. James F. Percy, Los Angeles, Calif.; Mrs. Wm. R. Brooksher, Jr., Ft. Smith, Ark.; Mrs. Arthur C. Christie, Washington, D. C.; Mrs. Rolls Packard, Chicago, Ill.; recording secretary, Mrs. Sherman S. Hesselgrave, St. Paul, Minn; and treasurer, Mrs. R. W. Tomlinson, Wilmington, Del.

Directors for two years: Mrs. J. Ralston Wells, Daytona Beach, Fla.; Mrs. Joseph Pettit, Portland, Ore.; and Mrs. Joseph Hume, New Orleans, La. By virtue of her office, Mrs. Arthur B. McGlothlan, St. Joseph, Mo., is ex-officio director for one year.

The gavel and President's pin were presented to the new President, Mrs. Walter Jackson Freeman, of Philadelphia. The new officers were introduced by the President. After her inaugural address, Mrs. Freeman announced the appointment of her committee Chairmen as having been approved at the post-committee board meeting:

Program—Mrs. Arthur B. McGlothlan, Missouri.

Public Relations—Mrs. A. Haines Lippincott, New Jersey.

Hygeia—Mrs. Rogers N. Herbert, Tennessee.

Revisions—Mrs. S. A. Collom, Texas.

Press and Publicity—Mrs. Milton P. Overholser, Missouri.

Printing—Mrs. J. Newton Hunsberger, Pennsylvania.

Archives—Mrs. William B. Odenatt, Pennsylvania.

Historian—Mrs. Allen H. Bunce, Georgia.

A rising vote of thanks was extended to the Chairman of the Convention Committee and to all of those whose charming and gracious hospitality was expressed in every possible way on every occasion.

The A. M. A. will meet in Milwaukee, Wis., in 1933.

GERTRUDE M. BURGES HARRIS,
(MRS. WM. L. HARRIS),
Delegate from Virginia.

Novelty Work by Auxiliaries.

"It's hard nowaday to find a novelty in Auxiliary work, but the New Orleans Auxiliary certainly carried off one palm," according to Mrs. Walter Jackson Freeman, in the April *A. M. A. Bulletin*. "To meet the desperate need for medicines in the Clinics and in the Welfare work of the City, between October 15th and February 1st, the Auxiliary collected 10,906 physicians'

samples! What a charity, not only to the needy poor, but to the physicians wives, thus happily relieved of the disposition of thousands of lotions and potions, plasters and salves. They are collected every two months and sent to the Children's Welfare and other organizations, who in turn give to the Clinics the medicines they themselves are unable to use. I recommend this idea, particularly to the city auxiliaries, where it seems entirely feasible. The aid of the Junior League might be invoked, or a motor corps of our own juniors formed. The Washington Auxiliary already has a motor corps who might be interested. Three days a week they take the welfare workers from the hospitals on their round of duty. On two days a week they carry groups of children to the hospitals for physiotherapy. The District Auxiliary also reports having 'placed *Hygeia* in one hundred homes.' "

"Another novelty, peculiar to El Paso, Texas, is the eradication of pollen-bearing weeds to forestall hay fever. No effort is too great to eliminate this curse, apparently ever more prevalent, and I particularly urge every Auxiliary to consider the possibility of hiring unemployed to clean up vacant lots and plant them with vegetables. At small initial expense hay fever victims would be relieved, work would be provided for the needy, and whole families would be assured of their Summer vitamins. It seems worth trying."

Other Notes From the Same Source

"Judging by reports in the State journals, interest in *Hygeia* is steadily increasing. Delaware, Georgia, Missouri, West Virginia and Florida all give it special mention. Florida, and in fact the Southern Auxiliaries in general, are working on medical history and biography. Student loan funds are another universally favorite and much needed activity. Scholarships in medical schools are comparatively few, and the course is too exacting to leave time for self-support. Here again the Auxiliary can fill an otherwise empty niche in the medical world.

"North Carolina, South Carolina and Alabama are busily preparing for their annual meetings this Spring. North Carolina reports two new Counties in progress of organization. Colorado, whose editorial, 'Take this Journal Home to Your Wife,' bids fair to become a slogan, has two new Auxiliaries, some of whose members think nothing of driving sixty-five miles through snowdrifts to attend a meeting. The Georgia Auxiliary is cooperating with the medical association, the state dental society, the state health department and many other organizations in holding regional health conferences at strategic points. Auxiliary members appear on the program with other speakers. Such conferences cannot fail to impress even the most ignorant layman with the value of organized effort to stamp out diseases, such as typhoid, malaria and diphtheria, all prevalent and all preventable."

In the March Bulletin letter of Mrs. Freeman is a paragraph containing a message Mrs. Freeman would like conveyed to all Auxiliary women. You will agree with its timely reasonableness:

"Records lead me to another thought in regard to Auxiliary reports in State Medical Journals. May I offer a suggestion? It's entirely proper to publish the names of new officers and committee chairmen, but it's distinctly disappointing to read only that Mrs. John Jones reported for the Public Health Committee and Mrs. Samuel Smith for Public Relations, and to find all the rest of the valuable space—that costs the Medical Society good hard cash—devoted to social trivialities. Can't we safely assume that Mrs. Thomas Townsend was a gracious hostess, that the ribbons matched the flowers, that there was no salt in the ice cream, and that piano, violin and voice were in tune? The State Journals are so generous in the space they give the Auxiliaries that I do feel that we ought to report the work planned and actually accomplished by Mrs. Jones and Mrs. Smith and their committees instead of stressing food, decorations and musical programs. Reports of committee work are bound to be full of helpful suggestions for other Auxiliaries, and in the last analysis we are organized for a serious purpose and are interested in each other's progress toward the goal."

Truth About Medicine

In addition to the articles enumerated in our letter of March 26th, the following have been accepted:

Chappel Bros., Inc.
- Chappel Liver Extract (Oral).
- Chappel Liver Extract (Subcutaneous).
  - Ampoules Chappel Liver Extract (Subcutaneous), 2.5 c.c.

Gilliland Laboratories, Inc.
- Diphtheria Schick Test Toxin, Diluted Ready for Administration—Gilliland.
- Diphtheria Toxoid—Gilliland.

Hoffmann-La Roche, Inc.
- Digalen Injectable—Roche.

Lederle Laboratories, Inc.
- Banana Allergenic Extract—Lederle, Beef Allergenic Extract—Lederle, Chicken Meat Allergenic Extract—Lederle, Codfish Allergenic Extract—Lederle, Corn Meal Allergenic Extract—Lederle, Crabmeat Allergenic Extract—Lederle, Green Pea Allergenic Extract—Lederle, Horse Serum Allergenic Extract—Lederle, Lamb Allergenic Extract—Lederle, Lima Bean Allergenic Extract

—Lederle, Milk Allergenic Extract—Lederle, Orange Allergenic Extract—Lederle, Pork Allergenic Extract—Lederle, Pyrethrum Allergenic Extract—Lederle, Rice Allergenic Extract—Lederle, Rye Allergenic Extract—Lederle, Spinach Allergenic Extract—Lederle, Tobacco Allergenic Extract—Lederle, Wheat Allergenic Extract—Lederle, White Potato Allergenic Extract—Lederle, Chocolate Allergenic Extract—Lederle, Sheep Dander Allergenic Extract— Lederle, Horse Dander Allergenic Extract—Lederle, Orris Allergenic Extract—Lederle, Cow Dander Allergenic Extract—Lederle, Flaxseed Allergenic Extract—Lederle, Cottonseed Allergenic Extract—Lederle, Feathers Allergenic Extract—Lederle, Goat Dander Allergenic Extract—Lederle, Buckwheat Allergenic Extract—Lederle, Almond Allergenic Extract—Lederle, Peanut Allergenic Extract—Lederle, Dog Dander Allergenic Extract—Lederle, Egg White Allergenic Extract—Lederle, Kapok Allergenic Extract—Lederle, Mustard Allergenic Extract—Lederle, Cat Dander Allergenic Extract—Lederle, Rabbit Dander Allergenic Extract—Lederle.

Concentrated Pollen Antigens—Lederle, Series A, B, C, D. E.

Ragweed Combined Pollen Antigens—Lederle, Series E and F.

H. A. Metz Laboratories, Inc.

Ampules Salyrgan Solution, 2 c.c.

National Drug Co.

Undulant Fever Vaccine.

Scott & Bowne Laboratories.

Scott's Norwegian Cod Liver Oil (Plain).

Scott's Norwegian Cod Liver Oil (Flavored).

Scott's Emulsion of Cod Liver Oil.

Wall Chemicals, Inc.

Walco Ethylene for Anesthesia.

The following articles have been exempted and included with the List of Exempted Nonmedicinal Articles (New and Nonofficial Remedies, 1931, p. 481):

Lederle Laboratories, Inc.

Glycerinated Allergenic Extracts—Lederle.

Calco Chemical Co., Inc.

Methylthionine Chloride (Calco).

Merax, Inc.

Merax Mercury Cyanide Solution.

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Merthiolate Ophthalmic Ointment, 1:5000.—It contains merthiolate (New and Nonofficial Remedies, 1931, p. 282), one part, in 5,000 parts of a base consisting of liquid petrolatum and wool fat with small amounts of paraffin, white petrolatum and ceresin. Eli Lilly & Co., Indianapolis, Ind.

Tincture Merthiolate, 1:1000.—It contains merthiolate (New and Nonofficial Remedies, 1931, p. 282), 0.1 Gm., and monoethanolamine, 0.1 Gm., dissolved in alcohol, 50 c.c.; acetone, 10 c.c., and water, sufficient to make 100 c.c. Eli Lilly & Co., Indianapolis, Ind.

Mead's Brewer's Yeast Tablets.—Each tablet contains Mead's powdered brewer's yeast (see Revised Supplement to New and Nonofficial Remedies, 1931, p. 18), 0.4 Gm. (6 grains). Mead Johnson & Co., Evansville, Ind.

Scarlet Fever Streptococcus Antitoxin (Refined and Concentrated).—It is prepared by the method of Drs. Dick, by license of the Scarlet Fever Committee, Inc. It is marketed in packages of one syringe containing 2,000 units (prophylactic dose), and in packages of one syringe containing 10,000 units (therapeutic dose). Gilliland Laboratories, Inc., Marietta, Pa.

Trichloroethylene.—Trichlorethylene.—The actions of trichloroethylene have not been investigated comprehensively. It appears to have a selective action on the sensory endings of the trigeminal nerve, whereby it affords relief in trigeminal neuralgia. Different individuals seem to show a wide variation of susceptibility to this action. Large doses cause narcosis, and excessive doses cause death. The liquid is irritant and should not come in contact with the nose when inhaled.

Trichlorethylene-Calco.—A brand of trichloroethylene—N. N. R. It is supplied in the form of tubes containing 1 c.c. Calco Chemical Co., Inc., Bound Brook, N. J. (Jour. A. M. A., March 5, 1932, p. 815.)

Decholin.—Dehydrocholic Acid.—An oxidation product of cholic acid derived from natural bile acids. For a discussion of actions and uses see Bile Salts and Bile Salt Compounds (New and Non-official Remedies, 1931, p. 92). Decholin is proposed for use in functional insufficiency of the liver; to outline the bile ducts at operation and in relieving the possible occurrence of postoperative symptoms; in cholecystography, to accelerate the appearance of the gall-bladder shadow and to hasten removal of residual tetraiodophenolphthalein from the biliary apparatus; and in cardiac decompensation with hepatic congestions, cirrhosis of the liver and similar disturbances of hepatic function with ascites. The drug is also supplied in the form of 3¾ grain tablets. Riedel-de Haen, Inc., New York.

Decholin Sodium.—Sodium dehydrocholate.—The sodium salt of dehydrocholic acid. For a discussion of the actions and uses, see Bile Salts and Bile Salt Compounds (New and Non-official Remedies, 1931, p. 92). The actions and uses are the same as those of decholin. It is administered intravenously and is supplied in ampoules containing 10 c.c. of a five and twenty per cent solution. Riedel-de Haen, Inc., New York.

Tuberculin B. F. (Bovine).—A tuberculin Denys (New and Non-official Remedies, 1931, p. 369), prepared with bovine cultures of Bacterium tuberculosis. It is marketed in 1 c.c. vials; also in serial dilutions. The Cutter Laboratory, Berkeley, Calif. (Jour. A. M. A., March 12, 1932, p. 887).

FOODS

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

Mead's Powdered Lactic Acid Milk (Whole Milk Cultured) (Mead Johnson & Co., Evansville, Ind.)—Powdered spray-dried whole milk which has been cultured with Streptococcus lactis and incubated to a high lactic acid content; packed in an atmosphere of nitrogen in hermetically sealed tins. The vitamins A and B (complex) of the milk used are practically unchanged; vitamin C is slightly affected. This product is for infant feeding in accordance with a physician's instructions.

S. M. A. (S. M. A. Corporation, Cleveland, Ohio).—A dried powdered homogenized mixture of skim milk, lactose, beef fat, coconut oil, cocoa butter, cod liver oil and potassium chloride. The chemical constants of the fat are similar to those of human milk. The product is claimed to contain sufficient cod liver oil to be antirachitic and antispasmodic in a majority of babies. It should, however, be supplemented with

orange juice or other adequate source of vitamin C. It is intended for infants deprived of human milk. It may also be used as a supplement to human milk.

Powdered Lactic Acid Milk (Half Skim) Acidulated with U. S. P. Lactic Acid (Mead Johnson & Co., Evansville, Ind.).—Powdered spray-dried partially defatted milk (1.5 fat content) containing added lactic acid; packed in an atmosphere of nitrogen in hermetically sealed tins. The product is recommended for infant feeding in accordance with a physician's instructions. The vitamins A and B (complex) remain practically unchanged and vitamin C is only slightly affected.

S. M. A. Concentrated Liquid (Sterilized) (S. M. A. Corporation, Cleveland, Ohio).—A homogenized mixture of skim milk, lactose, beef fat, coconut oil, cocoa butter, cod liver oil and potassium chloride. The chemical constants of the fat are similar to those of human milk fat. The product contains sufficient cod liver oil to be antirachitic and antispasmodic in a majority of babies. It should, however, be supplemented with orange juice or other adequate source of vitamin C. It is intended for infants deprived of human milk, or as a supplement to human milk.

Bowman's Home Leader Bread (A. Bowman & Son, Roanoke, Va.)—A white bread made by the sponge dough method. It is claimed to be a bread of good quality.

Mead's Powdered Whole Milk (Mead Johnson & Co., Evansville, Ind.).—A powdered spray-dried whole milk hermetically sealed in cans in an atmosphere of nitrogen. The vitamins A and B (complex) of the milk used are practically unchanged; vitamin C is slightly affected. It is claimed that the powdered milk mixed with seven parts by weight of water is practically equivalent to standard milk and is suitable for infant feeding.

PROPAGANDA FOR REFORM

Synthalin.—No preparations given orally are of proved value in the treatment of diabetes. Synthalin, which has been given the most extensive trial, does seem to be beneficial in an occasional case, but Synthalin is far from being nontoxic and in some patients it produces liver damage. It seems best at present to use insulin and nothing else. (Jour. A. M. A., February 13, 1932, p. 573).

Effect of Digitalis Bodies on the Vomiting Reflex.—A moderately toxic dose of digitalis bodies induces attacks of vomiting, which continue and become more intense as the dose is increased. The vomiting may stop for several hours and then recur after the drug has been discontinued. However, the vomiting may cease as the drug is continued and other toxic effects appear in the form of premature contractions of the heart or bigeminal rhythm. An experimental study undertaken to determine if it was possible for digitalis bodies to abolish this emetic action of the drugs, while at the same time increasing the extent of the cardiac poisoning, indicates that physicians should be cautious in relying on nausea and vomiting as a measure of the degree of cardiac poisoning. The continued use of large doses of digitalis bodies may depress the vomiting reflex and at the same time increase the intensity of the cardiac poisoning. (Jour. A. M. A., March 12, 1932, p. 893.)

Sedormid.—"Sedormid" is a carbamide—chemically, allylisopropyl-acetyl-carbamide. It may be looked on as a chemical decomposition substance of allylisopropyl-malonylurea (allylisopropyl barbituric acid), which is the hypnotic component in the nonaccepted but widely advertised proprietary "Allonal." The Council on Pharmacy and Chemistry has not accepted "Sedormid" for inclusion in New and Non-official Remedies, nor has the firm requested consideration of the product. The clinical reports on "Sedormid" are too vague and incomplete, being in the nature of testimonials embodying impressions and opinions, to warrant the claim that "Sedormid" is superior to other hypnotics and comparatively safe. (Jour. A. M. A., March 26, 1932, p. 1104.)

Book Announcements

Surgery with Special Reference to Podiatry. By EDWARD ADAMS, M. D., Professor of Surgery of the First Institute of Podiatry of New York. International Journal of Surgery Company. New York. 1932. Octavo of 480 pages. Cloth. Price, $5.00.

Human Sterilization. The History of the Sexual Sterilization Movement. By J. H. LANDMAN, Ph. D., J. D., J. S. D., The College of the City of New York. New York. The Macmillan Company. 1932. Octavo of 341 pages. Cloth. Price, $4.00.

Disease of the Coronary Arteries (Myocarditis). By DON C. SUTTON, M. S., M. D., Associate Professor of Medicine, Northwestern University; Attending physician, Cook County Hospital; Chief, Cardiac Follow-Up Clinic, Cook County Hospital, Chicago. and HAROLD LUETH, Ph. D., M. D., Formerly Instructor Physiology, Northwestern University, Chicago. St. Louis. The C. V. Mosby Company. 1932. Octavo of 164 pages. Illustrated. Cloth. Price, $5.00.

Sodomy's Best Liberator. A Scientific Adaptation. By MARCUS ROSENBERG. 440 E. 146th St., Bronx, New York. Copyright 1932. Pamphlet of 16 pages. Price, 75 cents.

Saving Children's Lives. Proceedings of a Luncheon given by Thomas W. Lamont to the Editorial Consultation Board of the Diphtheria Prevention Commission of the City of New York. Including a Proposal for a Permanent City Health Commission, together with a Special Account of the Methods Proved Successful in the New York Campaign against Diphtheria. Diphtheria Prevention Commission. The Department of Health. City of New York. 1932. Pamphlet of 52 pages.

Karuk Indian Myths. By JOHN P. HARRINGTON. Smithsonian Institution. Bureau of American Ethnology. Bulletin 107. United States Government Printing Office. Washington, D. C. 1932. Pamphlet of 34 pages. For sale by the Superintendent of Documents, Washington, D. C. Price, 5 cents.

Notes on the Fox Waponowiweni. By TRUMAN MICHELSON. Smithsonian Institution. Bureau of American Ethnology. Bulletin 105. United States Government Printing Office. Washington, D. C. 1932. Pamphlet of 195 pages. For sale by the Superintendent of Documents. Washington, D. C. Price, 35 cents.

Virginia Medical Monthly

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Editorial

Diverticulitis.

Practitioners must find an interest in all problems connected with the alimentary tract. Events of pathologic origin or even of a functional nature, arising in this system, constitute no small part in the daily problems of the medical practitioner as he deals with the sick. Conditions of misfunction and states of pathology in the sigmoid, however, or even of the colon, itself, while they may be more or less evident, have not been generally or popularly considered by medical men in practice as being of great frequency. Hence, such conditions have not taken an important place in the mind of the practitioner as he hears the complaints of his patients, particularly so as symptoms complained of may be referred to the left lower abdomen and mixed, more or less, in the story told by the patient with "constipation" using "cathartics" and "high colonic irrigations," etc.

Now, diverticulitis should be more definitely considered because, without doubt, the condition exists far oftener than it is recognized and, probably, proceeds from a bad to a worse state without any especial consideration unless discovered by accident or under the salutary practice of careful examination.

Recently, Lynch* has summarized this subject in a short paper and the matter has been discussed by informed observers. From this paper and discussion, material for comment has been obtained. Although this general subject has been in medical publications for 230 years, it has been dealt with in recent years with emphasis only occasionally. It would seem active interest in this subject was aroused in 1898 by Graser's paper. Then there followed a group of studies by Fischer, Beer, and Moynihan, and in 1907 by Mayo and Wilson; in 1908, Telling reviewed the whole subject. Since those early days of the century, many papers have appeared and the subject has been ably discussed. Lynch offers a review and quotes some eight cases illustrating the condition.

It is not, of course, a common condition because in 16,283 autopsies at Bellevue Hospital, between 1904 and 1930, there were only 169 cases of diverticulosis or diverticulitis. However, at the Mayo Clinic, it is stated, that "in one-third of all the patients examined roentgenographically, diverticulitis or diverticulosis was present."

Patients past thirty-five years who have suffered from contipation and have resorted to the customary use of cathartic drugs or have practiced prolonged use of colonic irrigations, may be considered as possible victims of this malady. Such persons may have attacks of pain in the left side: a dull aching on the side opposite from that usually experienced in appendicitis. In connection with the dull pain and with the use of medicine, there may be occasional diarrhea and gas distention and soreness. In the acute form this condition may take on the picture of acute inflammation with fever, leucocytosis and abdominal rigidity. In the more chronic forms there may be a tume-

*J. A. M. A., March 19, 1932, page 973.

faction and tumor formation over their area. As this proceeds, local peritonitis and abscess formation may occur. Rupture or perforation of such a state of diverticulitis brings the patient to an acute state that demands immediate surgical treatment.

The diagnosis of the condition in ordinary practice can be much assisted and improved by giving heed to complaints expressed by the patients as to pain over the left side of the abdomen because it is in the sigmoid and lower colon that diverticulitis most frequently occurs. One interested in the review of this subject may find a good opportunity for it in a perusal of Lynch's paper and his experience with his cases. The discussions by D. B. Roberts and Julius Friedenwald throw interesting sidelights on the subject.

Consider the Bureau of Medical Economics.*

Members of the Medical Society of Virginia may well consider the development of the function of the Bureau of Medical Economics, as established in March, 1931, by the American Medical Association. Probably outside of the paramount question of "keeping the graduate doctor up-to-date" by post-graduate efforts in medical education, no more important subject claims clearer and more accurate study today than the economics of medical practice. Before the onset of the national depression, when economic extravagance of every sort was in full swing, in that period before the fall of 1929, there was the agitation of the problem of mounting costs of medical care and all its attendant influences; but since the persistent and continued downward progress of financial loss and deflation in this country, following that time, economic problems of complex and conflicting and mixed sorts have been confronting the practical operations of the medical profession.

It is unnecessary even to intimate here the extreme and radical aspects of some of these propositions but it is desirable for our space to call attention to the important fact that a centralized, informed, competent, and unafraid agency of the Americal Medical Association has been created to make a careful and fearless study of these problems. Every doctor in the land may well give attention to this important Bureau and, by every effort, aid and assist it in reaching the facts and in solving the problems to be studied.

*J. A. M. A., Bureau of Medical Economics, page 1170, April 2, 1932.

Editorially, we feel heartily enthusiastic over the Bureau as it sets up this formula as its guide: "A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession."

Business methods and economic principles are essential to such a service and, therefore, in no wise should be considered unimportant to the prime objects of medical practice and its high principles of ethical relations. Business management and economic principles when applied properly, must make for a better physician and a better service to the satisfied patient.

Just observe a few of the subjects that this Bureau proposes to study and report upon to the members:

Capital investment in medicine.
Collection methods and agencies.
Evaluation of patient's ability to pay.
General insurance for physicians.
General investments.
Group practice.
Instruction in medical economics.
Medical fees.
Office plans.
Office systems.
Physician's income.
State, county and municipal health department activities.

Think what a helpful agency this will be to the busy, unbusiness-like medical practitioner, whether young or old, whether successful or not so successful: to all, this information may be of use. "Every question," says the report, "pertaining to medical economics will be considered impartially and without personal bias." Further, "Policies and principles established after careful consideration, supported by factual evidence and, wherever possible, by parallel procedures in the business, industrial or commercial fields will thenceforth govern in similar questions and situations."

Let our readers also note this paragraph of the report: "One must make a clear distinction between commercial and economic interests. Commercialism is characterized by: (1) unreasonable fees; (2) alleviation always predicated on cash in hand or no service; (3) unethical tendencies or practices; (4) destruction or scientific motive in both the individual and the profession at large; (5) transformation of

the profession into a trade or business; (6) destruction of confidence in the profession; (7) an insidious tendency toward state medicine." On the other hand, proper economics of medical practice should be based upon the following principles and motives: "(1) alleviation of suffering, prevention of disease, pursuance of research and the dissemination of dependable information are recognized as the primary obligations of the profession; (2) there should be a just compensation for service rendered: (3) modern ethical business methods are necessary to provide the highest type of service at the most reasonable cost: (4) ethical business methods insure confidence in the profession; (5) correct economic measures insure adequate amount and quality of service to indigent as well as pay patients; (6) the use of ethical business methods and correct economic measures serves to promote in the profession higher scientific attainments because of greater freedom from financial anxiety."

To these very true observations may be added other good and excellent reasons, but chief among them, it is right, fair and proper that such principles of business should obtain between the patient and the physician thereby promoting a sense of fair and honorable dealing on the part of each. Besides, such practices of candor and fairness in ethical economics make for defeat of those unfavorable trends that are today insidiously tending to some sort of so-called "State Medicine" which would strike at the foundation of the highest type of medical service and progress.

This report directs attention to a provision of wise financial forethought in providing for the "rainy day" when it cites a resolution making inquiry of the American Bankers' Association if that organization favors such a plan. The backing of the American Bankers' Association and State Bankers' Association in encouraging savings or reserves on the installment plan to provide for such possible needs in sickness seems to be most salutary and should be encouraged in every way. When installment savings are set up, insuring resources against future needs and requirements, as against the policy of discounting future by over indulgence in purchases to be paid for by installments, more stable economical conditions will prevail and more resistant will be the welfare of the people against "rainy day" conditions that must ever be expected individually and collectively.

This report treats subjects of medical economics such as medical care of the indigent sick, health and accident claim proofs, study of the question whether or not a fee should be properly charged for such service, capital investment and maintenance, income from medical practice, collection methods and agencies, group practice, and contract practice. These and other signally important problems, definitely interwoven with the welfare and efficiency of medical practice in this country, are under consideration by the Bureau. The results of these studies and the advice and suggestions made should be eagerly waited by doctors.

It is easily seen that these suggestions can be of use only in so far as they are disseminated thoroughly throughout the rank and file of medical practitioners. So that the state and county medical committees on economics may do well to keep in touch with the reports of this national bureau and transmit its findings and reports to local membership. The address is Bureau of Medical Economics, American Medical Association, 535 N. Dearborn St., Chicago, Ill.

Papers on Surgery and Other Subjects by George Tully Vaughan.

A career in medical practice may be fairly evaluated by the publications made, by positions filled in medical service, and by honors won and bestowed. Other events and conditions enter into such a stock taking of the life work of medical and surgical practitioners, but with the foregoing group of "circumstantials," without more intimate and accurate knowledge of the subject, one may not go far wrong in arriving at an accurate estimation of the workman. By such we have no hesitation in placing here on this page a word of high praise to George Tully Vaughan, honorary member of the Medical Society of Virginia, and to say that it is an honor for this Society to have him on its roll.

Dr. George Tully Vaughan has fortunately taken time to bring together in book form principal articles written by himself during an experience of fifty years. In the papers and publications, as they cover the years, one may note the developments and changes of surgical practice. A wide range of subjects are covered. All show the effects of careful and

thoughtful treatment and reflect credit on the author. The book recording the efforts of a master workman will be also welcomed and appreciated by Dr. Vaughan's many friends in the profession and especially by his former students who have through the years observed and attended upon his lectures and clinics.

It is impossible in this all too brief note to review this work. But it is a pleasure for the Editor of the VIRGINIA MEDICAL MONTHLY to announce receipt of the "Papers on Surgery and other Subjects" by George Tully Vaughan, M. D., L.L.D., F. A. C. S.

President's Message

Announcement as to Work on Prenatal and Postnatal Instruction in Virginia.

It is with satisfaction and pleasure that I make the announcement to the members of the Medical Society of Virginia that the efforts of the Department of Clinical Education and the committee on Prenatal and Postnatal Instruction have been successful in obtaining an appropriation of $10,000 from the Commonwealth Fund Board for carrying on work during the current year. You will be interested doubtless in reading Miss Quin's letter which is inserted here:

"APRIL 6, 1932.

"MY DEAR DR. SUTTON:

"It gives me great pleasure to advise you that at a meeting of the Commonwealth Fund Board, held yesterday, the following vote was taken:

"1. That subject to the appointment of a satisfactorily qualified clinician, an appropriation of $10,000 or such portion thereof as the General Director may determine, be made to the Virginia State Medical Society for the extension courses in postgraduate prenatal and postnatal instruction.

"2. That a reservation of $5,000 be set aside for the second year, conditioned on the Medical Society's continuing its contribution, and the balance being raised from other sources within the state.

"3. That the Society be informed that any action the Fund may take in connection with the third year will depend entirely upon progress of the undertaking and on the willingness of those within the state to assume an increasing financial responsibility."

"We are all delighted that the Board has made the appropriation, and hope that we may hear from you very shortly that the clinician is chosen and work is to begin. I am sending copies of this letter to all members of the Committee on Postgraduate Prenatal and Postnatal Instruction, and to Dr. Draper, Dr. Zehmer, and Dr. Hodges.

Yours most sincerely,
BARBARA S. QUIN,
Assistant Director.

It will be recalled by the members of the Society that last October at the annual meeting in Roanoke the Council and House of Delegates passed a resolution appropriating $2,500 for work in Prenatal and Postnatal Instruction which would be available when the Commonwealth Fund made an appropriation of $10,000 for the same work in this State. It is not intended at this time to go into a detailed statement of all the conditions under which this gift was made, nor is it necessary to recite the discussions engaged in by the joint committee which has been studying this question since the Roanoke meeting. We simply wish to inform the members of the Society of our success in securing the appropriation and to solicit your interest and hearty cooperation.

Following the receipt of Miss Quin's letter, the Joint Committee on Prenatal and Postnatal Instruction met at 2:30 P. M., April 14, 1932, in Richmond at the offices of the Medical Society of Virginia, with all members present, as follows: from the Medical Society of Virginia, Drs. Harrison, Hodges, Daniel and Moore; from the Medical College of Virginia, Dr. Sutton, Chairman of the Joint Committee and Dr. Call; from the University of Virginia, Drs. Flippin and Royster. Other persons present were Dr. Draper, State Commissioner of Public Health, Drs. Baughman and Williams, Obstetricians of the Medical College and the University of Virginia, Miss Edwards, Secretary-Treasurer of the Medical Society, Mr. George B. Zehmer, Director of the Extension Division, University of Virginia, Mr. George W. Eutsler, Secretary of the Joint Committee and Dr. M. E. Lapham, an applicant for the position of clinician who had been invited to attend by Dr. Sutton.

On motion of Dr. Flippin, the Joint Committee accepted with appreciation the donation of the Commonwealth Fund to the Medical Society of Virginia. There was extensive discussion by those present concerning the minute details of setting up the work and selecting a clinician. The plan of instruction decided on by the Committee contemplates the division of the State into circuits of selected centers in which the instructor may meet each class once

a week for a period of ten weeks. It was decided that two circuits of five centers each be conducted between June and November 30th. The first circuit will include the centers of Charlottesville, Lovingston, Lynchburg, Lexington and Staunton, with Orange, Luray and Woodstock as alternates. The second will include the centers of Richmond, Petersburg, Hopewell, Burkeville and Farmville, with Lawrenceville and South Hill as alternates. The enrollment of ten in a center was fixed as a minimum, allowing the Extension Division to organize with smaller enrollments as conditions seem to justify.

Each circuit shall have five centers and each course include ten meetings. Following Miss Quin's suggestion, it was thought best to charge a small fee for the course, and after some discussion, the Joint Committee fixed the fee for the course at $5.00, deciding at the same time to endeavor to induce as many physicians as possible to take the course. The committee felt that due to economic conditions throughout the State at this time there is no other probable source of revenue available, and it was thought wise to fix the fee for this year at the minimum because of the liberal contribution made by the Medical Society to the program on Prenatal and Postnatal Instruction.

In selecting a clinician for undertaking this work the Committee was fortunate in having several outstanding applicants to consider. Dr. Sutton, Chairman, called in consultation the teachers in Obstetrics and Gynecology of the University of Virginia and the Medical College of Virginia. Dr. Williams and Dr. Greer Baughman have met regularly with the Committee, and their advice in selecting a clinician has been invaluable. These gentlemen, after careful consideration of the applicants for the position and a study of their credentials, heartily endorsed Dr. Maxwell E. Lapham. The Committee, after due consideration and conference with Dr. Lapham, offered him the position, agreeing that his work should begin May 1st. The following information concerning Dr. Lapham will be of interest:

He is thirty-two years of age and single. Graduated from the University of Pennsylvania, College Department in 1922 and from the University of Pennsylvania Medical School in 1925. After graduation, served an internship at the Presbyterian Hospital, a rotating service, and spent five months as Assistant Surgeon in the Grenfell Foundation in Labrador. Upon his return to Philadelphia, he became Chief Resident of the University of Pennsylvania Hospital, and the year following Resident in Obstetrics under Dr. Edmund B. Piper at the University Hospital. In 1929, he was appointed Assistant Obstetrician in the same hospital, and also became Instructor in Obstetrics in the University of Pennsylvania Medical School. The latter position included being Consultant to the Southeastern Dispensary which is the undergraduate Out-Patient Maternity Service of the Medical School. He was then appointed Assistant Obstetrician to the Philadelphia Lying-In Hospital. A distinguished professor of obstetrics in Philadelphia has this to say in a letter recommending Dr. Lapham:

> "In so far as Dr. Lapham's character is concerned, I have from the first considered him invaluable as an assistant and co-worker. He has a remarkably pleasing personality and is universally liked and respected by all who know him. His tact is boundless, his ability for organization and instruction excellent. It would seem to me that you would be unable to find any young physician better fitted for the job you have in mind than Dr. Lapham, as I consider him to be one of the finest young obstetricians I have ever known.
>
> "I should be very pleased to hear from you further in regard to this matter, and also to know how your plans are completed for this very interesting work."

Having arrived at this point in preparation for this campaign of education, we wish further to secure the whole-hearted endorsement of the entire medical profession in the State.

"The method of procedure in organizing centers will in general be as follows: First, the use of publicity of a general nature through news articles carried by State and local papers and the VIRGINIA MEDICAL MONTHLY. This will be followed by publicity or rather information of a specific character through (a) circular letters to physicians in the vicinity of the centers organized, (b) personal letters from Extension officials, (c) printed (official) announcements and most important of all (d) personal visits to physicians by members of the Extension Division.

"In addition, the cooperation of local leaders will be secured especially that of the local medical society whenever one is available and interested, of local hospitals and of leading physicians. The Joint Committee may help very effectively by writing personal letters es-

pecially to "key" men, by personal visits whenever possible and especially to speak before local medical societies and at times by direct telephone conversation with leading representatives in the local centers. Finally, there will be visits to the centers by members of the Extension Division to arrange in detail for places for class meetings, to confer over and decide upon the time of meetings and other details of local importance."

"Local societies, both county and city, should be encouraged to formulate their own educational programs and when local plans do not interfere with the larger plan of the Joint Committee, the services of the Extension instructor should be offered to the local societies whenever requested. Perhaps the ideal in post-graduate medical education will be the development of the local societies as an educational agency to the point where they can plan and foster educational programs of the highest order and where the chief function of the State Society will be to assist the local societies in carrying out their respective programs."

I. C. Harrison, M. D., *President,*
Medical Society of Virginia.

Department of Clinical Education

Post-Graduate Clinic at the University of Virginia Hospital.

The ninth post-graduate clinic at the University of Virginia Hospital on April 28th and 29th, was not only the largest in respect to attendance, but the interest, enthusiasm and responsiveness displayed in the meetings was notably greater than at previous sessions.

The program of the two-day clinic, with the addition of ward rounds and of evening meetings devoted to open discussion of topics submitted by the guests, was as follows: "Hematuria," Dr. J. H. Neff; "Obstetric Care," Dr. T. J. Williams; "Rheumatic Fever and Its Complications," Dr. L. T. Royster; Symposium: "Interpretations of Gastric Symptoms," Dr. J. C. Flippin, Dr. D. C. Smith, Dr. W. E. Brown, Dr. W. H. Goodwin; "The Commoner Diseases of the Heart," Dr. J. Edwin Wood; "Clinical Manifestations of Arterial Diseases of the Extremities," Dr. Edwin S. Lehman.

The list of physicians enrolled for the clinic follows:

Altavista—Dr. W O. Smith
Arrington—Dr. B. F. Randolph
Dr D. C. Wills
Batesville—Dr. R. L. Page
Basic City—Dr. R. S. Griffith
Blacksburg—Dr Ford K. Lucas
Dr. D. S. Phlegar
Bedford—Dr. J. A. Rucker
Charlottesville—Dr. J. C. Coulter
Dr. T. H. Daniel
Chatham—Dr C. D. Bennett
Cismont—Dr. R. B. Shackelford
Clifton Forge—Dr. L. A. Houff
Dr. T. J. Roemer
Colonial Beach—Dr E. F. Gouldman
Covington—Dr. N. B. Jeter
Crozet—Dr. E. D. Davis, Jr.
Culpeper—Dr. J. T. Chelf
Dr. D. W Kelly
Dr. J. L. Stringfellow
Cumberland—Dr. E. B. Nuckols
Danville—Dr. I. C. Harrison
Dr. E B. Robertson
Elkton—Dr. M. T. McCulloch
Farmville—Dr. Dwight Rivers
Fishersville—Dr. H. F. White
Fredericksburg—Dr. J. E. Cole
Dr. C. Mason Smith
Free Union—Dr. W A. Kyger
Front Royal—Dr. D. M. Kipps
Harrisonburg—Dr. A. C. Byers
Dr. N. M. Canter
Hot Springs—Dr. Ira T. Hornbarger
Dr. J. M. Jarman
Dr. M. B. Jarman
Dr. Edgar A. Pole
Ivy—Dr. H. L. Baptist
Lottsburg—Dr. R. E. Booker
Louisa—Dr. H S. Daniel
Dr. H. W. Porter
Lynchburg—Dr. Powell Dillard
Dr. Ernest G. Scott
North Garden—Dr. Hunter Williams
Norton—Dr. T. J. Tudor
Orange—Dr. Lewis Holladay
Dr. Lee Taliaferro
Pembroke—Dr. S. A. Tuck
Petersburg—Dr. W. B. McIlwaine
Piney River—Dr. S. G. Miller
Quantico—Dr. C. V. Hatchette
Richmond—Dr. T. D. Davis
Dr. Edgar C. Harper
Scottsville—Dr. Percy Harris
Stanardsville—Dr. E. D. Davis
Staunton—Dr. G. R. Fisher
Dr. W. A. Murphy
Dr. M. J. Payne
Dr. A. F. Robertson, Jr.
Shenandoah—Dr. H. C. Hisey
Dr. B. C. Shuler
Dr. Jos. J. Waff
State Farm—Dr. L. W. Holladay
Swoope—Dr. W. F Hartman
Turbeville—Dr. J. A. Owen
Tye River—Dr. J. F. Thaxton

VINTON—Dr. N. M. Robinson
WAYNESBORO—Dr. J. F. Hubbard
WEYERS CAVE—Dr. H. G. Middlekauff
WHITE POST—Dr. Chas. O. Dearmont

Speakers Available for Society Programs.

The list of members of the faculties of the Medical College of Virginia and the Department of Medicine of the University of Virginia, with the topics on which they prefer to speak, is being reprinted in pamphlet form from the last issue of the MEDICAL MONTHLY. This list will serve as a guide for officers charged with the arrangement of programs, and the Department of Clinical Education stands ready to assist in arranging engagements for these speakers wherever their services are desired.

GEO. W. EUTSLER,
Executive Secretary.

Post-Graduate Course in Prenatal and Postnatal Care.

The organization of the first circuit for the post-graduate course in prenatal and postnatal care, with centers located in Lovingston, Lynchburg, Lexington, Staunton and Charlottesville, is being pushed to hurried but successful completion in time for the classes to begin work in the week of May 30th. The course is offered, in cities and counties where it is approved by vote of the medical societies, under the administration of a Joint Committee on Prenatal and Postnatal Instruction composed of representatives of the Medical Society of Virginia and of the two medical colleges, and under the instruction of Dr. Maxwell E. Lapham, the Field Clinician, whose appointment was announced in the last issue of the VIRGINIA MEDICAL MONTHLY.

Dr. Lapham was selected for this position after an intensive search for the best trained instructor available. He was highly recommended by the officials of the University of Pennsylvania Medical School and Hospital, especially by Dr. Edmund B. Piper, head of the Department of Obstetrics, Dr. Floyd E. Keene, Professor of Gynecology, and Dr. Charles C. Norris, Director of the Department of Obstetrics and Gynecology. Since his graduation from the University of Pennsylvania Medical School in 1925, Dr. Lapham has served with distinction as interne for two years in rotating service at the Presbyterian Hospital of Philadelphia, five months as assistant surgeon in the Grenfell Foundation in Labrador, one year as chief resident at the University of Pennsylvania Hospital, consultant to the Out-Patient Maternity Service of the Medical School and assistant obstetrician to the Philadelphia Lying-In Hospital, and three years as resident in obstetrics, assistant obstetrician, instructor in obstetrics and active assistant of Dr. Piper.

Dr. Lapham has appeared before the Augusta, Albemarle and Rockbridge County Medical Societies and the Lynchburg Academy of Medicine, with an engagement to speak before the Nelson County Society on Monday, May 23rd. He has presented the educational program of the Medical Society of Virginia with such favorable results that each of the four societies has unanimously approved the organization of a class. The Augusta County Society voted to sponsor the course and organize a group with a minimum enrollment of ten as an educational project of the Society itself, and the committee composed of Drs. Robertson, Womack and White have made the establishment of the class certain by securing ten enrollments.

The ten two-hour meetings of each course will consist of a lecture with clinical demonstrations followed by a round-table conference when the subject of the day may be discussed informally. The general subjects for the clinics as briefly outlined by Dr. Lapham are as follows:

1. Early Diagnosis of Pregnancy.
2. Prenatal Examination—in detail.
3. Adjuncts to Careful Diagnosis and Treatment of Pregnant Women.
4. Detailed Instructions to Patient.
5. Preparation For and Management of Labor and Delivery.
6. Immediate Care of New Born Baby.
7. Immediate Postpartum Complications.
8. Gynecological Examinations—General and Postpartum.
9. Bleeding in Pregnancy and Puerperium.
10. Toxemias of Pregnancy.
11. Suggested Subjects for Lecture.

The details for the first five centers, according to arrangements made in the first stages of organization, are as follows:

NELSON COUNTY: (Subject to final approval at the meeting of the Nelson County Medical Society on May 23rd.) The class will meet on Mondays in Lovingston, beginning May

30th. *Enrollments:* Drs. S. G. Miller, B. F. Randolph, J. F. Thaxton and D. C. Wills.

Lynchburg Academy of Medicine: The course was approved by unanimous vote of the Lynchburg Academy of Medicine on May 19th. The class will meet on Tuesdays, beginning May 31st, at 2:00 P. M. in the Municipal Building, 1001 Church Street. *Enrollments:* Drs. S. E. Oglesby and F. O. Plunkett.

Lexington: The course was approved by unanimous vote of the Rockbridge County Medical Society on May 18th. The class will meet on Wednesdays, beginning June 1st, at 2:30 P. M. in the Stonewall Jackson Memorial Hospital. *Enrollments:* Drs. J. H. Bailey, H. R. Coleman, H. R. Coleman, Jr., R. P. Cooke, F. M. Leech, J. E. Loyd, Hunter McClung, J. E. Seebert, F. L. Thurman, E. P. Tompkins and Reid White, Jr.

Staunton: The course was approved by unanimous vote of the Augusta County Medical Society on May 12th. The class will meet on Thursdays, beginning June 2nd, at 11:00 A. M. in the King's Daughters Hospital. *Enrollments:* Drs. Kenneth Bradford, G. C. Campbell, W. F. Hartman, W. A. Murphy, M. J. Payne, C. W. Putney, A. F. Robertson, Jr., W. C. Roller, A. L. Tynes and J. E. Womack.

Albemarle County: The course was approved by unanimous vote of the Albemarle County Medical Society on May 5th. The class will meet on Fridays, beginning June 3rd, at 3:00 P. M. in the Out-Patient Department of the University Hospital. *Enrollments:* Drs. Percy Harris, E. L. McQuade, W. D. Macon, John Nokes, M. L. Rea and T. J. Williams.

At the conclusion of this circuit during the first week in August, the Joint Committee plans to begin immediately upon a second circuit of five centers, located in the vicinity of Richmond and Farmville, provided always that the local society favors the organization of the course in its community.

Geo. W. Eutsler,
Secretary Joint Committee.

Proceedings of Societies

The Medical Society of Northern Virginia

Met in Strasburg, Va., April 12th, with a good attendance. Papers were read by Drs. Hunter H. McGuire, James A. Miller and J. E. Harris, all of Winchester. An outstanding feature of this meeting was the reporting of several cases of unusual interest by members.

This Society is composed of doctors in the counties of Clarke, Frederick, Page, Shenandoah, Warren and Rappahannock. Its officers are: President, Dr. C. H. Iden, Berryville; vice-president, Dr. G. G. Crawford, Strasburg; and secretary-treasurer, Dr. J. E. Harris, Winchester.

The Mid-Tidewater Medical Society

Held its regular quarterly meeting at Saluda, in the Court House on Tuesday, April 26th, with its president, Dr. R. D. Bates, in the chair. During the morning a business session was held, at which time reports were had from the Toxin-Antitoxin Clinics. The success of these was variable according to reports. It was the general opinion that the biggest difficulty was the segregation of true charity cases from those able to pay, and this led to the following resolution, which was adopted:

Resolved, That the Mid-Tidewater Medical Society go on record as being opposed to holding mass clinics for any persons except indigent patients, unless done so at the request of the local doctors and with their consent.

The doctors and guests were served a delicious lunch at the Hotel by the local doctors.

At the afternoon session, the following papers were read: Treatment of Pneumonia in Children, Dr. B. B. Jones, Richmond; Treatment and Early Diagnosis of Whooping Cough, Dr. Ambrose McGee, Richmond; Vomiting in Infancy, Dr. Thos. D. Jones, Richmond. Dr. Douglas Chapman, Richmond, presented a movie of the ox heart in action. Drs. Flannagan and Bagby of the State Department of Health spoke on Health Work with the Physicians in Tuberculosis and Maternal Welfare.

After adopting resolutions of appreciation to the doctors on the program for their helpful papers and to the local doctors for their hospitality, the meeting adjourned at 5:30, to meet at Camp Chesapeake on Tuesday, July 26, 1932.

M. H. Harris, M. D., *Secretary.*

Roanoke Academy of Medicine.

The third hospital meeting of the Academy was held at the Roanoke Hospital, April 18, 1932, at 8:30 P. M., at which time the following program was given:

Perforating Ulcer of the Stomach—Dr. T. D. Armistead.
Subacute Bacterial Endocarditis—Dr. W. C. Stephenson.
The Intravenous Use of Phenobarbital as a Preanesthetic Agent—Dr. Rees Morgan.
Traumatic Cyst of Parotid Gland—Dr. L. D. Keyser.
Pregnancy Tests—Dr. John O. Boyd.
Cancer of Gall-Bladder—Dr. E. C. Ambler.
Secondary Obstruction Following Cholecystectomy—Dr. W. L. Powell.

Dr. H. Heyward Westcott presided as chairman.

At the regular meeting of the Academy at Hotel Roanoke on Monday, May 2nd, a Preventive Medicine Program was given. Two papers read were as follows:

Medical Supervision of Our Schools and Adoption of a Sanitary Code—Dr. C. B. Ransone.
Food and Food Habits in the Pre-School Child—Dr. J. M. Bishop.

These papers were followed by a general discussion by members of the Society.

The next meeting of the Academy will be at the Jefferson Hospital, after which meetings will be discontinued for the summer.

C. H. Peterson, M. D., *Secretary.*

The Clinch Valley Medical Society

Held its Spring meeting at Appalachia, Va., April 23rd, under the presidency of Dr. Frank Pyott, of Tip Top, Va. Other officers of the Society are Dr. G. B. Setzler, Pennington Gap, and Dr. V. W. Quillen, Nickelsville, vice-presidents, and Dr. C. B. Bowyer, Stonega, secretary-treasurer. Forty-seven members were registered for this meeting, the program of which was arranged through the Department of Clinical Education of the State Society. A business session was held before lunch. Following a short address by the president at the afternoon session, talks were given by Drs. Edwin P. Leham, L. T. Royster, and T. J. Williams, of the University of Virginia, and by Dr. Warren F. Draper, State Health Commissioner.

Election of officers will be held at the next meeting, which is to be in Norton, Va., next October.

Medical Society of Maryland, Virginia and the District of Columbia.

At the semi-annual meeting of this Society in Norbeck, Md., on May 18th, the meeting was conducted by the retiring president, Dr. G. Frank Simpson, of Purcellville, Va., until the election of officers when the new president, Dr. Guy W. Leadbetter, of Washington, D. C., took charge. Dr. Samuel A. Nichols, Clarksville, Md., and Dr. W. Allen Griffith, Berwyn, Md., were elected vice-presidents, and the following, all of Washington, were re-elected: recording secretary, Dr. Robert E. Moran, corresponding secretary, Dr. Joseph D. Rogers, and treasurer, Dr. Robert Scott Lamb.

The Southside Virginia Medical Association

Met in Petersburg, Va., at the Central State Hospital, on March 8th, with a full attendance. Dr. Nolan D. C. Lewis, of St. Elizabeth's Hospital, Washington, D. C., gave the principal address of the meeting, his subject being Early Psychoneurosis. This with all other papers on the program was freely discussed. After the scientific program, the visiting doctors were entertained at a delightful buffet dinner by Dr. H. C. Henry and the staff of the Hospital. Dr. Ruth Mason, Petersburg, is president, and Dr. R. L. Raiford, Franklin, secretary of the Society.

The next meeting will be on June 14th, in Suffolk, Va.

News Notes

Invited Speakers for the Richmond Meeting.

Dr. I. C. Harrison, president of the Medical Society of Virginia, announces that he has secured as his special guests for the annual meeting, Dr. Robert B. Osgood, Boston, Mass., professor emeritus of orthopedic surgery at Harvard University, and Dr. William Minor Dabney, Baltimore, prominent general practitioner, and a former Virginian. Papers by two such men should add much to the interest of the meeting to be held in Richmond, November 1st, 2nd and 3rd.

American Medical Association.

The eighty-third annual meeting of the Association in New Orelans, May 9th to 13th,

furnished much of interest scientifically and socially. There was a registered attendance of approximately 2,700. Thirty-six of these were from Virginia and represented all sections of this State. Dr. E. H. Cary, Dallas, Texas, succeeded Dr. E. Starr Judd, of Rochester, Minn., as president. Dr. Dean Lewis, Baltimore, was made president-elect; Dr. Rudolph Matas, New Orleans, vice-president; and Dr. Olin West and Dr. Austin A. Hayden, Chicago, were both reelected as secretary and treasurer, respectively.

Milwaukee was selected for the 1933 place of meeting.

The following is a list of the Virginians who were in attendance:

Dr. E. L. Alexander, Newport News.
Dr. O. T. Amory, Newport News.
Dr. Howard Armstrong, Harrisonburg.
Dr. O. O. Ashworth, Richmond.
Dr. J. W. Cox, Alexandria.
Dr. B. C. Culler, Martinsville.
Dr. R. M. DeHart, Floyd.
Dr. Warren F. Draper, Richmond.
Dr. E. E. Epperson, Meadow View.
Dr. T. W. Hankins, Fordwick.
Dr. Wm. L. Harris, Norfolk.
Dr. S P. Hileman, Millboro.
Dr. O. L. Hite, Richmond.
Dr. J. M. Holloway, Fredericksburg.
Dr. J. Shelton Horsley, Richmond.
Dr. James W. Hunter, Norfolk.
Dr. Southgate Leigh, Norfolk.
Dr. P. D. Lipscomb, Richmond.
Dr. Wm. K. Lloyd, Christiansburg.
Dr. W. B. Martin, Norfolk.
Dr. W. A. McGee, Richmond.
Dr. Hunter H. McGuire, Winchester.
Dr. E. B. Miller, Elkton.
Dr. R L. Payne, Norfolk.
Dr. J. W. Sayre, Hampton.
Dr. E. G. Scott, Lynchburg.
Dr. R. F. Simms, Richmond.
Dr. James B Stone, Richmond.
Dr. L. E. Stubbs, Newport News.
Dr. E. C. S. Taliaferro, Norfolk.
Dr. D. M. Thomasson, Lynchburg.
Dr. J. R. Tucker, Williamsburg.
Dr. Warren T. Vaughan, Richmond.
Dr. Tiffany J. Williams, University.
Dr. David C. Wilson, University.
Dr. G. W. Young, Pennington Gap.

News from University of Virginia, Department of Medicine.

On April 4th, Dr. Edwin P. Lehman addressed the Staff Meeting of the Southside Community Hospital in Farmville.

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On April 19th, Dr. H. B. Mulholland spoke before the South Piedmont Medical Society, meeting in Danville, on the subject of Diabetes.

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On April 22nd, Dr. C. C. Speidel read a paper, by invitation, before the American Philosophical Society in Philadelphia on The Growth and Repair of Living Nerves. On May 10th, he gave the principal address on this same subject on the occasion of the annual initiation exercises of the Virginia Chapter of Sigma Xi.

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At the meetings of the Virginia Academy of Science at Hollins College on April 22nd and 23rd, Dr. S. W. Britton spoke on Some Effects of Cortico-Adrenal Extract and other Substances on Adrenectomized Animals; Dr. E. L. Corey on The Induction of Precocious Sexual Maturity by Cortico-Adrenal Extract; Dr. H. E. Jordan on Ovarian Gestation; Dr. J. E. Kindred on A Young Human Ovum; and Dr. D. C. Smith on Increase in the Permeability of the Central Nervous System to Drugs by Jugular Compression.

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At the meeting of the Clinch Valley Medical Society at Appalachia on April 23rd, Dr. Edwin P. Lehman spoke on Arterial Disturbances in the Extremities. Dr. L. T. Royster on Nephritis in Children, and Dr. T. J. Williams on Backache in Women.

———

At the meeting of the University of Virginia Medical Society on April 25th, Dr. Warren T. Vaughan, of Richmond, spoke on The Control of Pollen Allergy.

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On April 27th, Dr. H. E. Jordan attended the meeting of the Division of Medical Sciences of the National Research Council in Washington.

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At the meetings of The Federation of American Societies for Experimental Biology in Philadelphia, from April 27th to 30th, Dr. S. W. Britton read a peper on Effects Produced by Cortico-Adrenal Extract on Normal Animals; Dr. Alfred Chanutin on Studies in Kidney Insufficiency Produced by Partial Nephrectomy; Dr. E. L. Corey on Observations on Circulation in the Fetal Albino Rat; and Mr. Herbert Silvette (Porter Fellow in Physiology) on Some Effects Produced in Vitro by Cortico-Adrenal Extract.

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On the night of May 2nd, Dr. Karl T. Compton, President of the Massachusetts Institute of Technology, spoke before the Graduate Scientific Club on Science Finds a Way.

The Commencement Exercises of the Graduating Class of the University of Virginia Hospital School of Nursing were held on the afternoon of May 5th. The class numbered thirty-one. The address to the graduates was given by Dr. Winford H. Smith, Director of the Johns Hopkins Hospital, who spoke on Tendencies in Nursing Education.

Dr. H. B. Mulholland spoke on Diabetes before the Rockingham County Medical Society in Harrisonburg on May 9th.

Dr. H. H. Hazen, of Washington, D. C., spoke on Skin Diseases in the Negro before the University of Virginia Medical Society on May 9th.

The ninth Post-Graduate Clinic, given by the Medical Staff, was held at the University of Virginia Hospital on April 27th and 28th. Sixty-nine doctors were in attendance.

News Notes Medical College of Virginia.

Dr. William D. Cutter, Secretary, Council on Medical Education and Hospitals, American Medical Association, delivered the commencement address at the close of the ninety-fourth session of the Medical College of Virginia, Richmond, on Tuesday, May 31st.

The Medical College of Virginia, Richmond, conferred the honorary degree of doctor of science upon General Walter D. McCaw, an alumnus, at the commencement exercises. Dr. McCaw was chief surgeon of the A. E. F. from October, 1918, to July, 1919.

Frank L. Apperly, M. A., M. D., Sc. D., has accepted the professorship of pathology at the Medical College of Virginia, Richmond. Until recently Dr. Apperly was a member of the department of pathology of the University of Melbourne. He was a Rhodes scholar and graduated in medicine at Oxford in 1920. Dr. Apperly has done important scientific work chiefly in pathology both in Europe and in Australia.

Dr. Joseph A. White, emeritus professor of ophthalmology and otolaryngology of the Medical College of Virginia, celebrated his eighty-fourth birthday by addressing the senior and junior students and faculty of the college. Dr. White's subject was *Ophthalmology During My Lifetime.* At the close of his address he was presented with flowers and generously applauded by students and faculty.

Graduation exercises of the St. Philip Hospital school of nursing were held Monday, May 23rd, at 3:30 o'clock. Mr. Richard W. Carrington will deliver the commencement address to the graduating class which numbers fourteen. Mr. Carrington is chairman of the Richmond committee on inter-racial cooperation.

The college was represented at the North Carolina Dental Society meeting at Elizabeth City, N. C., May 2nd-3rd-4th, by Dr. Harry Bear, Dr. A. L. Simpson, Dr. A. O. James, Dr. G. A. C. Jennings and Dr. I. T. Hardy.

The annual post-graduate clinic of the college was held May 27th and 28th. Dr. F. J. Wampler was chairman of the committee in charge of this clinic.

A new record for service was set by the out-patient department of the Medical College of Virginia during the month of April, as shown in the report for this period completed by Dr. F. J. Wampler, director of the department. For the month there were 5,436 visits by patients for treatment, an increase of several hundred over any previous month.

The average number of patients daily was 209; on one day the total reached 267.

The great increase in the work of the department during the last few months could have been handled satisfactorily only through the assistance of the Junior League of Richmond, which has generously furnished two workers daily to assist with handling the complicated task of patient's records. This work has been invaluable, and is appreciated both by the patients and college officials.

For the patients during April nearly 2,000 prescriptions were filled, and 1,621 laboratory diagnostic examinations were made. Fifty-nine per cent of the patients were unable to pay even the small fees charged by the clinic, which has created a definite problem in financing clinic activities.

More than one-half the patients were male and almost one-half of them were white. Approximately one-sixth of the patients had never been to the clinic before.

News Notes from the Duke University School of Medicine and Duke Hospital.

On the evening of April 22nd, Dr. Ernest W. Goodpasture, Professor of Pathology, Vanderbilt University, Nashville, Tenn., lectured at the Duke Hospital on Cytotropic Viruses.

On May 10th, Dr. Hugh H. Trout, of Jefferson Hospital, Roanoke, Va., gave a clinic on the Release of Pericardial Adhesions.

On May 9th, 10th and 11th the National Board examinations were given at the Duke University School of Medicine, with twenty-one students taking Part I and six taking Part II.

Dr. Emily Gardner

Announces the opening of her offices at 1100 West Franklin Street, Richmond, Va., for the practice of pediatrics. Since her resignation from the Bureau of Child Health, Virginia State Department of Health in 1928, she has interned at the Willard Parker Hospital and the Babies' Hospital, both of New York. Last year, with the aid of the Mary Putnam Jacobi Fellowship Fund, she studied in England, Scotland and Austria.

The American Association for the Study of Goitre

Is to hold its annual meeting at Hamilton, Ontario, Canada, June 14th, 15th and 16th. The Royal Connaught Hotel will be headquarters for the meeting. The scientific sessions are open to any member of the medical profession in good standing, upon payment of the registration fee of five dollars. There will be hospital clinics, dry clinics, addresses and papers by members. Cards of admission to hospital clinics may be obtained on registration. Dr. M. O. Shivers, Colorado Springs, Col., is president, Dr. Henry S. Plummer, Rochester, Minn., president-elect, Dr. J. R. Yung, Terre Haute, Ind., corresponding secretary, and Dr. F. B. Dorsey, Jr., Keokuk, Ia., recording secretary.

Dr. J. E. Nance,

Recently of Franklin, Va., is now connected with the staff of the New Jersey State Hospital, at Trenton, N. J. Dr. Nance is an alumnus of the Medical College of Virginia, in the class of '29.

Air Ambulances in Siam.

A novel feature of the health work in Siam is the air-ambulance service. Owing to lack of highways, the usual means of transport is the bullock cart. As this method is too slow for patients requiring urgent medical treatment, the Government has arranged that the regular mail-service airplanes shall also carry sick persons, physicians, and medical supplies. Persons unable to pay are carried free of charge; for others there is a fixed mileage rate. Medical supplies for combating epidemics are transported free.

Siam now has nine Red Cross health centers, the first having been opened in 1923. This far-Eastern country, whose progressive absolute ruler recently visited the United States, also has a school, opened in 1925, which offers a six-month course in public-health nursing and midwifery to graduate nurses.

Dr. W. L. Varn,

South Hill, Va., has been elected vice-president of the Rotary Club of that place for the coming year.

The Tri-State Hospital Association of Virginia, North Carolina and South Carolina

Held a splendid meeting in Richmond, Va., May 17th, 18th and 19th, with a registered attendance of over two hundred. Following a subscription dinner on Wednesday evening, there were several talks and a number of lantern slides of North Carolina hospitals were shown. A dance followed this session. It was decided to hold the next meeting in Charleston, S. C., during the time when the azalea gardens are in bloom.

The members from the three states held separate business sessions. There was a rather small delegation from South Carolina and all of the same officers were re-elected. Mr. F. O. Bates, of Roper Hospital, Charleston, continues as president.

The North Carolina section elected Dr. Richard Boyd Davis, of Greensboro, as president, and re-elected Mr. E. G. Farmer, of Wilson, as secretary-treasurer.

The Virginia section elected Dr. John Bell Williams, of St. Luke's Hospital, Richmond, president; Dr. J. L. McElroy, of Memorial Hospital, Richmond, vice-president; and Mr. M. Haskins Coleman, Jr., of Johnston Willis Hospital, Richmond, was re-elected secretary-treasurer.

Dr. Frank P. Coleman,

Of the class of '31, Medical College of Virginia, after practicing for a time in West Virginia, has located at Stuarts Draft, Va.

Elected to Raven Society.

Among those elected members of the Raven Society at the University of Virginia, this Spring, are Dr. J. Shelton Horsley, Richmond, and Dr. James Morrison, Lynchburg, from the alumni, and Dr. Kenneth F. Maxcy, of the faculty of the University. The Raven Society is the historic local society of the University.

The Virginia State Dental Association

Held its annual meeting at Winchester May 16th, 17th and 18th. This meeting was held jointly with the West Virginia State Dental Society.

This meeting was largely attended by members from Virginia and West Virginia and by many dentists from the neighboring states. An exceptional program was presented by prominent practitioners from various sections of the country. The lectures were varied and covered a wide range of subjects.

Among the public health officials who gave lectures were Dr. Hugh S. Cumming, Surgeon General United States Public Health Service, Dr. W. T. Henshaw, Health Commissioner State of West Virginia, and Dr. W. F. Draper, Health Commissioner State of Virginia.

About one hundred table clinics were presented and this feature proved a most interesting part of the meeting.

Dr. Ralph P. Snapp, of Winchester was president of the Virginia Association and presided at this meeting. The new officers elected at this meeting are Dr. W. H. Street, Richmond, president; Dr. S. D. Kent, Danville, president-elect; Dr. A. M. Wash, Richmond, re-elected secretary-treasurer.

The association decided to hold its 1933 meeting in Richmond.

Dr. E. G. Gill,

Roanoke, Va., was re-elected district governor of the Virginia Lions' Club, at the meeting held in May.

Officers of Winchester Memorial Hospital.

At the meeting of the Board of Directors of the Winchester, Va., Memorial Hospital, on May 22nd, Dr. Hunter H. McGuire was re-elected president of the Board, which office he has held since the founding of the hospital thirty-one years ago. Dr. J. E. Harris was also re-elected secretary.

The International Congress on Biliary Disease

Is to meet at Vichy, France, September 19-22, 1932.

Under the patronage of the leading clinicians and investigators of France, an important series of symposia dealing with ailments (particularly calculi) of the liver and biliary tract has been arranged. Representative authorities from the leading countries of Europe, North and South America and Asia will present these or take part in the formal discussions.

All phases of the subject chosen will receive attention. The sections upon roentgenology, experimental investigation and therapy offer unusual progress. The leading surgeons of Europe will present the latest in operation technique. There will be an unusual pathologic exhibit.

An attractive series of social and recreational features has been planned in a beautiful environment.

Participation in all the educational and social features of the Congress is secured by registration and the payment of a fee of 50 francs (French).

Reduced rates for travel and hotel residence have been secured.

The official program of the Congress and information respecting steamship rates, hotel accommodations, etc., may be secured by addressing: Frank Smithies, M. D., President of the Congress for the United States, 920 N. Michigan Avenue, Chicago, Ill.

Dr. Snowden C. Hall

Has just located in Richmond, Va., with offices in the Medical Arts Building, where he is associated with Dr. William H. Higgins, in the practice of medicine. Dr. Hall is a native of Kilmarnock, Va., a graduate of William and Mary College (1923) and of the Harvard Medical School (1930). He recently completed eighteen months' service at the Boston City Hospital.

Are You Going Abroad This Summer?

If so, why not secure information through the offices of the MONTHLY with regard to the European Clinic Tour which sails from New York on July 19th? Rates have been reduced since the first announcement of this Tour and this is a wonderful opportunity for any physician who wishes to visit the clinics while traveling in Europe.

Dr. B. A. Middleton,

Emmerton, Va., has been elected one of the delegates from Richmond County to the State Democratic Convention in Richmond, on June 9th.

Dr. Benjamin L. Hume,

Recently located at Nokesville, Va., announces his removal to Orange, Va., where he is continuing the practice of his profession.

Dr. Bernard Barrow,

Blackstone, Va., R. F. D., has been elected one of the delegates from Brunswick County to the Virginia State Democratic Convention to be held in June.

Doctors as Officers in Society of Colonial Wars.

At the meeting in May of the Virginia Society of Colonial Wars, Dr. Alexander G. Brown, was re-elected governor. Other doctors elected to office in this branch are Dr. Clifton M. Miller as lieutenant governor and Dr. J. Shelton Horsley as surgeon. All are of Richmond.

American College of Physicians.

At the recent meeting of the College in San Francisco, under the presidency of Dr. S. Marx White, of Minneapolis, Dr. Francis M. Pottenger, Monrovia, Calif., succeeded to the presidency. It was decided to hold the next meeting in Montreal, Canada, the date to be named later. Officers elected are: President-elect, Dr. George Morris Piersol, Philadelphia; first vice-president and editor, Dr. Maurice C. Pincoffs, Baltimore, Md.; second vice-president, Dr. Charles G. Jennings (re-elected), Detroit, Mich.; third vice-president, Dr. Noble Wiley Jones, Portland, Ore.; treasurer, Dr. Elmer H. Funk, Philadelphia; secretary-general, Dr. Wm. Gerry Morgan, Washington, D. C. Mr. E. R. Loveland, Philadelphia, continues as executive secretary.

Dr. Nelson Mercer

Announces the removal of his residence and offices to 1816 West Grace Street, Richmond, Va., where he will continue his practice in internal medicine.

Pictorial Exhibit of the New York City Cancer Committee.

The New York City Cancer Committee has recently prepared an unusual type of historical exhibit, designed to show, through pictures, the great advances in the care of the sick since very early times, particularly with reference to cancer. If the public can be made to understand and appreciate what facilities are now available for the treatment of cancer, there should be less hesitation and delay in seeking help when necessary.

It is emphasized in the exhibit that New York State has been a pioneer in the work of cancer control. In 1884 the first hospital devoted especially to cancer treatment was opened in New York City. This is the institution now known as the Memorial Hospital for the Treatment of Cancer and Allied Diseases.

Four years later (1888) there was opened at Buffalo, under a special grant from the Legislature, the research laboratory which has developed into the State Institute for Malignant Disease, the first state maintained cancer center to be established in the United States.

In 1924, the New York City Cancer Institute, the first municipal hospital for cancer in the United States, was opened for patients, and in 1927, a Division of Cancer was formed in the Department of Hospitals of the city, with control over this and all other municipal cancer activities.

In 1930, of the seventeen special cancer hospitals in the United States with a total of 1,273 beds, six, containing 613 beds, were in New York State.

Photostatic copies of the charts composing the exhibit have been made through the generosity of the Prudential Insurance Company of America, and a limited number are available for loan to responsible organizations. Requests may be sent to the American Society for the Control of Cancer, 25 West 43rd Street, New York, or to the New York City Cancer Commitee, 34 East 75th Street, New York.

Assignments in Medical Reserve Corps of U. S. Army.

Major Alvah L. Herring, Med. Res., Richmond, Va., has been assigned to the 52nd Station Hospital, in capacity of Chief of Surgical Service. This unit is known locally as the Grace Hospital Unit.

First Lieutenant Albert T. Brickhouse, Med. Res., Hopewell, Va., has been assigned to the 41st General Hospital.

First Lieutenant Manfred Call, III, Med. Res., Richmond, Va., has also been assigned to the 41st General Hospital, both of the latter in the capacity of Medical Ward Officers.

The West Virginia State Medical Association

Is holding its sixty-fifth annual meeting at Parkersburg, June 21st, 22nd and 23rd. In addition to papers by members, there will be a number of guest speakers. The annual golf tournament will be held on the day prior to the opening of the meeting, as also will be two sessions of the House of Delegates. This promises to be an excellent meeting. Dr. Albert H. Hoge, Bluefield, is president, and Mr. Joe W. Savage, Charleston, executive secretary.

Married.

Dr. George Russell Maloney and Miss Emilie Littlepage Simmons, both of Richmond, Va., May 16th.

Dr. Russell Osborne Lyday and Miss Carolyn Bush, both of Greensboro, N. C., March 24th.

Dr. James Wilbert Love, formerly resident physician at Memorial Hospital, Richmond, Va., but now associated with the Crile Clinic, Cleveland, Ohio, and Miss Mabel Tompson, of Welshpool, Montgomeryshire, England, April 10th.

Notice.

The Library of the State Health Department has a large number of bulletins on a wide range of subjects pertaining to health and medicine, and is glad to lend any of these bulletins for a reasonable length of time to physicians and others who may wish to use them in preparing talks or papers. Write to Librarian, State Health Department, Richmond, Va., stating subjects desired.

Dr. R. W. Vaughan,

Richmond, Va., was re-elected president of the General Alumni Association of the University of Richmond, at its meeting in this city in May.

Dr. W. W. Koontz,

Dayton, Va., was seriously hurt in an auto accident, recently, when his car turned a somersault in avoiding a collision with a truck on the Spotswood Trail, while en route to Richmond.

Wanted—

Good location in Virginia, by middle aged doctor. Address "G. S.," care this journal. (*Adv.*)

Hourly Nursing Service.

The Private Duty Nurses' Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

For information, dial 3-1656. (*Adv.*)

Obituary Record

Dr. Thomas Marshall Jones,

Alexandria, Va., died at a hospital in Washington, D. C., May 11th, after an illness of several weeks, following an operation. He was 83 years of age. Dr. Jones received his medical diploma from the University of Maryland in 1870 and had been engaged in the practice of medicine over sixty years. He was a widely known physician and had been coroner of Alexdria for many years. He had been a member of the Medical Society of Virginia since 1887. His wife and several children survive him.

Dr. George Grant Howery,

Christiansburg, Va., died on March 8th, his death being due to pneumonia. He was 45 years of age and a graduate in medicine from Lincoln Memorial University, Knoxville, Tenn., in 1912. He had been a member of the Medical Society of Virginia for a number of years.

Dr. Etta May Hadley Judd,

Lynchburg, Va., died March 30th, as a result of injuries sustained in an automobile accident on March 25th, near Charlottesville, Va. She was born in 1870 at Branford, Conn., and graduated from the Woman's Medical College of Pennsylvania in 1895. She practiced in Litchfield, Conn., and in New York City, before locating in Lynchburg, where she had practiced since the Spring of 1919. She was a member of her local medical society and of the Medical Society of Virginia.

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Summer-Time Use of Viosterol

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PRELIMINARY REPORT OF A METHOD OF INTERNAL FIXATION OF TRANSCERVICAL FRACTURES OF THE NECK OF THE FEMUR IN THE AGED.

H. H. WESCOTT, M. D., Roanoke, Va.

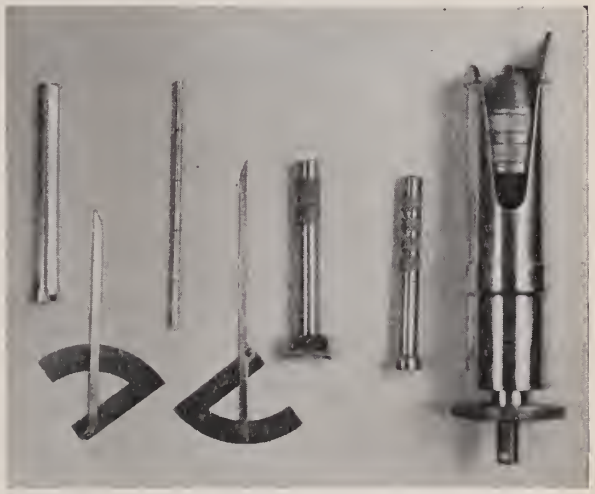
In December, 1931, it was my misfortune to see four women with fractured hips who were between the ages of 72 and 88 years. The high morbidity and mortality incident to this type of fracture with the present method of treatment was so forcibly realized while I was trying to care for these aged individuals that a new method of fixation was sought which would allow early activity and good functional results without a major surgical procedure.

The method herein described for the internal fixation of recent fractures of the neck of the femur recommends itself for the following reasons:

1. Closed reduction is accomplished by the Whitman method.
2. Only a small superficial incision is necessary.
3. The surgical procedure totals six to ten minutes.
4. No added support is necessary; avoiding the use of plasters or splints.
5. The patient may walk immediately with the use of crutches.

The open operation for the reduction and internal fixation of transcervical fractures of the femur constitutes a major surgical procedure. It has been reserved for the cases of non-union after they have been treated by the more conservative methods of reduction and external fixation. The Albee and the Smith-Petersen open reduction and internal fixation operations are among the most noteworthy. They are major surgical procedures, largely because of the open reduction. The Albee method employs the bone peg as the instrument of fixation, while the Smith-Petersen method employs the bladed stainless steel pin, first described by him. The pin used by Dr. Smith-Petersen in his open operation is employed in the following cases to eliminate the necessity of external fixation and allow immediate activity.

The internal fixation operation, herein described, is recommended for use in recent transcervical fractures of the femur following reduction by the Whitman method, and differs from the operations of either Dr. Albee or Dr. Smith-Petersen, in that no exposure of the hip joint is necessary, thereby eliminating the shock of a major surgical procedure.



Instruments devised for the internal fixation of recent fractures of the neck of the femur. Pin extractor; pin driver; impactor; roentgenogram protractor; measuring rod; bone protractor; pin.

The first two cases were operated upon with roentgenograms as a guide to the angle of entrance of the pin. While Case 1 was eminently successful, Case 2 proved the interpretation of wet roentgenograms was not entirely dependable. Experimental studies were then made on cadavers to determine the true angulation of the neck of the femur in both planes. This was proved possible by rotating the normal femur to determine the angle of torsion or ante-

version. Then with roentgen rays centered over the hip and with anteversion corrected, the true angulation and length of the neck of the femur was determined.

In Case 3 the anteversion, angulation and length of the neck of the normal femur was determined before operation. After reduction, the course of the pin was determined by using occasional roentgenograms as an adjunct. Three factors helped to guide the course of the pin: Known angulation, sensation during entrance, and occasional roentgenograms. The same factors would also guide the bit of the Albee motor or of the hand drill.

Case 1, Mr. J. T., a farmer, age 52, received a fall, February 18, 1932, and fractured the neck of the left femur. He rode 150 miles to the hospital with the left leg in a Thomas splint with intrinsic traction. The roentgenogram showed a transcervical fracture of the neck of the left femur with external rotation of the distal fragment. He was placed in a twenty-pound Buck's extension for thirty-six hours. His general condition would neither

Fig. 1.—Case No. 1. Fractured neck of the femur; (A) Before reduction; (B) After reduction.

Fig. 2.—Case No. 1. Fractured neck of the femur after reduction; (C) and (D) showing progress of pin.

justify the use of the Whitman cast nor the Albee or Smith-Petersen method of internal fixation. On February 20, 1932, forty-eight hours after the injury, the patient was taken to the operating room. A portable X-ray machine was centered over the left hip with a plate changer or tunnel under the hip. Pre-operative roentgenograms were made to allow the study of the position of the fragments. Nembutal, 3½ grs., was administered intravenously, producing light sleep. Nitrous oxide gas then gave sufficient relaxation and the fractured hip was reduced. The anesthetic was discontinued while stereoscopic roentgenograms could be made for the question of the position of the fragments. The skin area was prepared for operation with an assistant maintaining the position of the hip. The anesthetic was resumed and a small three-inch incision was made over and below the trochanter. One inch below the vasturnus line a hole was made into the shaft of the femur and a stainless steel flanged pin was driven through the neck of the femur to engage the proximal fragment. The course of the pin was checked repeatedly by stereoscopic roentgenograms. The anesthetic was discontinued for the making, developing and reading of the plates. The wound was closed and the patient was returned to bed with no signs of shock. Four pounds of traction was applied to prevent flexion, but was found unnecessary and it was discontinued. A back rest was allowed on the second day and he was discharged from the hospital on the fifth day. Word was received on the fifth week that he was walking without crutches. He was advised to resume the use of crutches until further notice. Stereoscopic roentgenograms, seven weeks from the date of the operation, showed good position of the fragments and normal callus formation, with a range of motion in flexion, extension, abduction, adduction, internal and external rotation equal to the normal hip.

Case 2, Mrs. C. B. S., age 82, received a fracture of the neck of the left femur in December, 1931. Her general condition was extremely poor and she was irrational the first three weeks. A Buck's extension was applied but was removed after a few weeks because of irritability. Her general condition showed gradual improvement in spite of spasm of hip muscles occasioned by any motion in bed. March 24, 1932, her condition was thought to justify the same operation as was employed in Case 1 and she was admitted to the hospital. On March 26th, three months after her injury, the operation was performed. Pre-operative

Fig. 3.—Case No. 1. Fractured neck of the femur after reduction; (E) With pin inserted; (F) Seven weeks after operation.

roentgenograms showed external rotation and over-riding of the distal fragment with marked absorption of the neck of the femur. One and one-half grs. of nembutal produced light sleep and relaxation was induced by nitrous oxide gas. The fracture was reduced and checked by the X-ray which showed good reduction but marked absorption of the bone. The same method was employed as in Case 1 in inserting the pin. The pin had been inserted about two inches when abnormal resistance was encountered. Wet roentgenograms suggested an anterior angulation. The pin was extracted and reset with a feeling of greater resistance than was first experienced and by roentgenograms it was then found to be posterior. The head of the pin was pulled off when attempting to change its position, so the nail was driven in to engage a small part of the head and rest on the posterior rim of the acetabulum. The X-ray showed good position of the fragments, but the motions of the hip were restricted to a few degrees. The patient was returned to bed in good condition without signs of shock and she was discharged from the hospital on the fifth day, able to be propped up and to roll around in bed and to enjoy the use of a wheel chair. Six weeks from the date of operation, she continued to be very comfortable.

Fig. 4.—Case No. 2. Fractured neck of the femur of four months' duration; (A) Before reduction; (B) After reduction showing the bone absorption of the neck of the femur.

Improper application of the pin in the second case was the result of having to rely too much on the reading of wet roentgenograms, and, second, to the lack of a pin extractor. After the pin had been advanced far enough for its abnormal course to be determined by the reading of wet roentgenograms, it had entered the bony cortex of the neck of the femur and no available instrument could sufficiently grasp the blades to allow enough traction for extraction of the pin. The pin, considered slightly anterior in the first wet

Fig. 5.—Case No. 2. Fractured neck of the femur after reduction; (C) and (D) showing progress of pin.

negative, was found on examining the same negative after drying, to be posterior. The incorrect reading, therefore, resulted in added posterior displacement of the angulation of the pin.

It was decided to work out as far as possible, before an operation, the angulation of the neck of the normal femur in the two planes, i. e., as to the angle of torsion or anteversion of the neck in respect to the lower condyles of the femur and the angulation of the neck in respect to the shaft of the femur. The torsion or anteversion was determined with the patient in bed and the tube of a portable X-ray machine placed on the opposite side of the normal hip, with the rays making an acute angle with the pelvis. With a series of negatives placed external to the hip, and perpendicular to the rays of the machine, the hip was rotated through an arc with a negative made at each three to five degrees of rotation. The degree of rotation was imprinted with lead numbers on each negative, the numbers signifying the angle in degrees made between the imaginary line through the lower condyles of the femur with the line of rays from the tube. Roentgenograms showing the head of the femur superimposed on the trochanter gave the true angle of torsion or anteversion of the femur. The angle of the neck with the shaft of the femur was determined by internally rotating the femur, correcting the angle of anteversion and making negatives parallel to the neck of the femur. A graduated steel rod, parallel with the neck of the femur and equidistant from the plate, gave the true length of the neck of the femur and the length of the pin necessary to transfix the fragments. After reduction of the transcervical fracture and correction of anteversion or torsion of the neck by internal rotation of the femur, a sterile protractor of the type used for determining the angulation of the neck of the femur on the roentgenogram was placed against the shaft of the femur parallel with the horizon, and the course of the pin directed accordingly. The above procedure was tested and proven in the dissecting hall.

Fig. 6.—Case No. 2. Fractured neck of the femur with pin inserted. Note that head has been pulled from pin.

The necessity of a mechanical pin extractor was realized in Case 2 and such an instrument has been made that will grasp either the pin head or the blades, should the pin head become loosened. The latter is unlikely to again occur as the pins are now being machined with heads en bloc. The extractor exerts counter-pressure against the shaft of the femur during the extraction of the pin, thereby preventing the disruption of the fragments.

Case 3, Mr. F. P. F., age 59, received a transcervical fracture of the neck of the right femur April 23, 1932. He was admitted to the hospital and does not remember having fallen. His general condition was extremely poor. While in bed, the angle of torsion of the normal femur was determined by the method as noted above, and found to be 15 degrees. On May 3rd, ten days after the accident, he was taken to the operating room. A portable X-ray machine was centered over the fractured hip and the distal fragment was found to be externally rotated and displaced upward for one-half inch. Nembutal, 2½ grs., was administered intravenously and followed by a fall in systolic blood pressure of from 180 to 110 m.m. The nembutal was discontinued although there was no hypnosis. Nitrous oxide gas was administered and an attempt was made to reduce the fracture. The anesthetic was discontinued and roentgenograms were made with the condyles of the femur internally rotated 15 degrees. The stereoscopic roentgenograms showed fairly good reduction of the transcervical fracture of the neck of the femur. In the meantime, the skin was prepared for operation. Nitrous oxide gas was resumed and an incision was made over the trochanter. A small opening was made in the cortex of the bone. A protractor on the X-ray plate showed the angle of the neck in its relation to the external border of the femur to be 126 degrees. A sterile protractor was placed against the cortex and the pin was inserted at

126 degrees angulation with the shaft and parallel with the horizon. Nitrous oxide gas was discontinued and roentgenograms were made showing the pin to be slightly posterior. The assistant was then found to be holding the femur with 10 degrees correction of torsion or anteversion instead of maintaining the full 15 degrees necessary for correction of the anteversion. The extractor was used and the pin was partially withdrawn and started anteriorly. The pin was then driven far enough to transfix the fragments. The wound was closed and the patient was returned to bed with no symptoms of shock from the operation. The patient reacted immediately and was able to actively move the hip, complaining of no discomfort except in the region of the incision over the greater trochanter. Twelve hours after the insertion of the pin, against orders, the patient walked around the ward. A roentgenogram on the following day showed a slight bending of the pin but the position of the

Fig. 7.—Case No. 3. Fractured neck of the femur ten days after injury; (A) Before reduction; (B) After reduction.

Fig. 8.—Case No. 3. Fractured neck of the femur after reduction; (C) and (D) showing progress of pin.

fragments remained good. Immediately following the operation passive motions of the hip were found to be normal in all directions. The examination on the next day after his having walked around the ward without support showed some limitation of abduction and internal rotation. Possibly some shortening resulted from premature weight bearing but this was so negligible that it could not be determined when compared to the normal, the measurements from the anterior superior spines of the ilium to the malleoli being equal on both sides. He was discharged from the hospital on the fourteenth day complaining of no discomfort except that due to his general condition.

The bladed stainless steel nail has been used in these cases because the patient's general condition would not allow an open reduction with internal fixation or a Whitman reduction with cast. No external fixation was used except in the first case, when a Buck's extension with a few pounds of weight was employed for twenty-four hours.

Case 1 walked without crutches at the end of the fifth week of his own volition. He was advised to discontinue weight bearing without crutches for five to seven weeks longer, even though with full weight bearing, motions of the hip remained normal and produced no discomfort, and roentgenograms showed perfect reduction and position of the fragments.

Case 2 remains comfortable. The fractured fragments remain in good position but the point of the pin resting on the posterior rim of the acetabulum limits free motion of the hip. As a result of not having an extractor at the time of the operation, the course of the pin could not be changed and the operation should be repeated.

Case 3 has continued weight bearing both with and without crutches since he began to walk twelve hours after operation and cannot, because of his mental condition, be made to realize the necessity of rest from weight bearing to the fragments. Apparently, after his first excursion, no further damage has been done to the hip, as the X-ray negatives show the fragments in good position with no further bending of the pin. The measurement of the right leg continues to show no shortening as compared to the left, and there has been no increase in limitation of the motion of the hip joint.

Fig. 9.—Case No. 3. Fractured neck of the femur; (E) With pin inserted; (F) Ten days after operation. Note slight bending of pin due to patient having walked immediately without support.

Conclusions

1. Recent transcervical fractures of the femur may be reduced and transfixed by a surgical procedure requiring six to ten minutes.
2. The shock of a major operation is eliminated.
3. External fixation is eliminated.
4. The patient after but a few hours is ready for a wheel chair or, if so disposed, may at once enjoy the use of crutches.

The writer wishes to acknowledge with thanks, the cooperation of Dr. Charles H. Peterson, of Roanoke, Va., in the making and the reading of the roentgenograms in the operative cases and in the experimental work on the cadavers. Also, he wishes to express appreciation for the courtesy and privileges extended to us by the Anatomical and Roentgenological Departments in the use of the cadavers and other materials at the University of Virginia.

206 *Medical Arts Building.*

TREATMENT OF DEPRESSED FRACTURES OF THE VAULT, AND THE PREVENTION OF INTRACRANIAL INFECTION IN CERTAIN FRACTURES OF THE BASE OF THE SKULL.*

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In a series of 1,383 hospital patients treated by the writer and his associates for head injuries, there were 531 fractures of the skull. Of this total number of fractures, eighty-eight, or 16.5 per cent, were listed as depressed fractures of the vault. Thirteen patients in the depressed fracture group died—a mortality of 14.7 per cent.

Depressed fractures of the vault, extradural hemorrhage and subdural hematoma are more or less clear-cut lesions following head injury, and all require a cranial operation. Any of them may be combined with widespread contusion and laceration of the brain. The intensive study of one or more lesions resulting from head injury would appear to be productive of better results than to attempt to group all of the effects in a single discussion. While the gravity of a head injury is not dependent upon a fracture of the skull, the fact remains that in any large series of cranio-cerebral trauma, the mortality rate varies with the percentage of fracture cases in the series. A relatively large number of fractures in a series of head injuries means a correspondingly high mortality from more extensive trauma of the brain, generally found in patients with fracture.

Because of the large number of cases, their serious nature and the economic relations, the treatment of head injuries is the most important problem engaging the attention of neurosurgeons and others whose interests lie in surgery of the brain. Some of these problems are best met by a policy of non-interference, some by cranial operations to offset pressure or prevent infection; but, regardless of the treatment eventually adopted, all cases of cranio-cerebral injury require intelligent study in order that the problems may be adequately met.

The discovery of skull fracture may be of great importance in the diagnosis of patients who are unconscious and without gross signs or history of injury. Careful examination of the scalp and X-ray of the skulls of such patients should be routine. The direction of a fracture line may strengthen the suspicion of an extradural clot, the diagnosis of which is too often reached after much hesitation and delay, even among those who have considerable experience with intracranial injuries. In view of the help which the study of skull fractures gives in indicating the type and location of the associated intracranial injury, I do not unreservedly endorse the prevailing tendency apparent in many papers on the subject, to give slight consideration to simple fractures of the skull. The entire injury of brain, skull and scalp should receive adequate attention.

The present discussion is limited to a consideration of (1) simple and compound depressed fractures of the vault, (2) certain fractures of the base involving the accessory sinuses.

The treatment of depressed fractures of the skull at the present time is based upon the practically unanimous opinion that if depressed fragments are not lifted from the brain, epilepsy is a very probable result. Convulsions following untreated depressed fractures are due to the injury to the brain produced at the time the fracture is received, and not to the mere depression of bone. If the dura is not penetrated by the depressed bone, convulsions are infrequent, according to Wagstaffe[1] who found epilepsy in 1.6 per cent of 820 cases in which the skull was fractured but the dura not torn, as against 18.7 per cent of cases with dural penetration. Naffziger[2] concluded, as a result of experimentally produced depressed fractures, that the indentation of the brain covered by intact dura, produced no pathologic changes in the brains of rabbits, even when a 5 mm. bead was inserted between

*Read before the Southern Surgical Association at its annual meeting held at White Sulphur Springs, W. Va., December 8-10, 1931.

the dura and skull, to produce pressure. Naffziger's experimental work is valuable as an effort to determine from scientific experiment the actual brain damage from the depression of bone without concomitant brain injury, but the controlled insertion of a foreign body between the dura and skull has no clinical counterpart in depressed fractures produced by violence affecting the brain as well as the skull. Several factors may be operative in causing the local brain damage of the ordinary depressed fracture of the skull. Contusion of the brain beneath the depression is almost inevitable, even in the cases of slight depression. When the depression is considerable, laceration of the dura and brain with hemorrhage, and scar formation binding the membranes to the brain, are natural consequences. If spiculation of bone is present, and it may be even when the outer table is smooth, the reparative process must necessarily exceed that of cases in which the brain is not pierced by bone fragments. Indriven spicules of bone stimulate more glial and connective-tissue proliferation with the production of a larger scar. Treatment of a depressed fracture is therefore inadequate, if it is designed for the sole purpose of elevating the depressed bone, which is perhaps the least harmful element of the situation. Penfield,[3] in the treatment of four carefully selected cases of epilepsy following depressed fractures, excised the scar in the brain with good results. Prevention of epilepsy is a far more promising field than the cure of epilepsy, provided prevention is kept clearly in mind when the primary operation is done for depressed fracture with laceration of the dura and brain. In other words, proper treatment of the lacerated brain is of greater importance than elevation of the depressed bone. Contused lacerations of the scalp, whether simple or overlying the depressed fracture, should be cleanly excised. The excision of the scalp laceration, the elevation of depressed fragments of bone, débridement of the contaminated dural laceration, and removal of indriven spicules of bone with the lacerated and pulpified brain tissue, should be deliberate and thorough. In cases of fracture due to gunshot wounds the same principles of treatment are followed, except that greater difficulty will be experienced in removing from the brain the débris consisting of bone fragments, blood clots and foreign bodies. The modern method of treating penetrating fractures of the skull was described in detail by Cushing,[4] but some of the important principles taught in this article appear to have been lost sight of. While the prevention of septic encephalitis is the primary purpose of treatment of compound depressed fractures, of secondary, though scarcely less importance, is the prevention of the formation of large, disabling scars, which are known to be a cause of epilepsy. In simple depressed fractures, and in many which are compound, it is practicable to use the fragments of bone to fill in the defect made in elevating the fracture. In a short time a defect thus covered is practically as firm as the surrounding skull. If it becomes necessary to sacrifice the bone in the treatment of simple or compound depressed fractures, a perforated celluloid plate may be used at the time or later, in preference to any kind of autogenous graft.

Attention has frequently been called to the difficulties of operation upon those depressed fractures overlying the large venous sinuses. In one early case of our series, in which there was a compound depressed fracture with perforation of the longitudinal sinus, a furious hemorrhage resulted upon elevation of the fragments. Because of the serious condition of the patient, gauze packing was resorted to to control the hemorrhage. The patient finally recovered after the formation of a large fungus and a right parietal lobe abscess. This is the only case of fungus or infection of the series of eighty-eight depressed fractures in which there was no communication with the accessory sinuses. Fungus formation following operation on depressed fractures of the vault results from the failure to excise the laceration and suture the scalp in layers, from not closing the dural perforation and from the pernicious use of gauze drainage, which is too commonly employed even at the present time.

Patients with old compound depressed fractures are fortunately rare at the present time, and seek operation nearly always because of convulsions. Culture of the bone fragments will sometimes show pyogenic organisms in these fractures for many months after the wound is healed. The repair of defects by either bone-graft or celluloid plate in such a case at the time the old depressed fracture is operated upon is likely to fail because of latent infection.

Fractures of the Base Affecting the Accessory Sinuses

Practically all the cases of meningitis that have resulted from head injuries, in my experience, have followed those injuries in which the fracture line passed into one of the accessory sinuses, mastoid or middle ear. Meningitis as a result of compound fractures of the vault is rarely seen, except as a terminal event of septic encephalitis, which is a common result of badly treated compound depressed fractures. Bleeding from the nose, mouth or ears in the absence of evidence of external injury to account for the hemorrhage, is usually due to fracture of the base of the skull, either in the anterior or middle fossa. It is frequently difficult in the presence of such bleeding to determine whether or not cerebrospinal fluid is mixed with the hemorrhage. Undoubtedly, escape of cerebrospinal fluid with the bleeding, is a much more common occurrence than is generally believed. The incidence of meningitis in such cases is determined largely by the presence or absence of infection in the bony sinus through which the fluid is escaping from the subdural space. A leakage of clear cerebrospinal fluid through the nose or ear may persist for an indefinite period after bleeding has stopped, or it may not appear until some weeks after the injury, when the patient is thought to be on the road to recovery. A cerebrospinal fluid leak following fractures of the skull naturally lowers the intracranial pressure. The escaping cerebrospinal fluid pooled in an infected bony sinus may, as a result of the varying intracranial pressure, re-enter the subdural space, thus carrying infection into the meninges. While it is true that cerebrospinal fluid leaks may continue for many years without producing meningitis, yet infection almost invariably occurs sooner or later. In one recent case the patient developed a fatal meningitis from a cerebrospinal fluid leak of ten years' duration.

The early entrance of air into the subdural space or ventricles, following fracture of the skull involving the accessory sinuses or mastoid, may be an accompaniment of a cerebrospinal fluid leak, and is probably due to the condition of sudden variations in intracranial pressure, with the production of a condition known as "brain flap," as described by Heathcote and Henry.[5] Dandy,[6] in a review of the literature on pneumocephalus, collected twenty-eight cases and reports three of his own. He states that the condition, if untreated, has a mortality rate of 40 per cent, and that the diagnosis of air in the brain can be made upon a history of sneezing followed by the sudden escape of cerebrospinal fluid from the nose. Rand[7] reports eight cases of pneumocephalus following skull fractures, three of whom died of meningitis. One of these cases was operated upon after the onset of a fatal meningitis. The remaining five cases recovered following operation with closure of the rent in the dura. We have recognized three recent cases of pneumocephalus complicating head injury, with fractures involving the accessory sinuses. In each case the entrance of air into the brain was detected shortly after the accident occurred. All of the patients received rather severe head injuries and shock was present in every case. It does not appear that in the cases in which air enters shortly after injury, the air is forced into the brain, as might be inferred from the histories of the cases, in which the entrance of air followed sneezing. When the air enters the dura immediately after the injury, the lowered intracranial pressure with marked variations due to vomiting or labored respiration is probably responsible, and the air is aspirated into the dura rather than forced as during the act of sneezing. The presence of air, with or without a cerebrospinal fluid leak, is a condition with serious possibilities. Such patients often have rigidity of the neck due to the presence of air, before infection of the meninges takes place. The situation is simply one of compound fracture of the skull in which the cavity of the dura is in communication with a potentially or actually infected space. In two of our cases the air was demonstrated within an hour after the patient was admitted to the hospital. By the following day it had decidedly lessened in one of them, and a few days later had entirely disappeared. A policy of non-interference was decided upon in view of the rapid disappearance of the air from the ventricles and subarachnoid space. The air in this case entered through a fracture of the frontal sinus. The patient made a good recovery. The second case was admitted to our service four days after air in the meninges had been demonstrated by X-ray. Fatal pneumococcic meningitis had already developed. The fracture in this case was through the ethmoid region. The

patient died quickly after the onset of meningitis. In view of the danger of meningitis in persisting cerebrospinal fluid leaks through the nose, and in cases of air in the subarachnoid space or ventricles, we believe that operation for closure of the dural laceration should be done as soon as the patient has recovered from shock, provided the leak continues or the amount of intracranial air has not lessened.

The treatment of persistent cerebrospinal rhinorrhea, with or without pneumocephalus, by radiotherapy and position of the head, as described by Bromberg,[8] might be attended in rare cases by spontaneous closure of the dural perforation. It should be remembered, however, that the onset of a complicating infection of the accessory sinus involved, with an extension of this infection to the brain, may happen at any time, and delay in closing the perforation may cost the patient his life. The dural laceration can often be reached and closed with sutures, fascial strips or muscle grafts, through the defect made in operation upon the depressed fracture. If there is no depressed fracture about the frontal sinuses, a small osteoplastic flap may be made. The dura overlying the orbital plate and ethmoids is lifted up from the bone and the dural perforation sought for and closed. The operation is extradural throughout, in repairing such leaks. In one such case, with comminution of the base of the anterior fossa and with incarceration of the dura in the crevices of the bone, a leak took place weeks after the patient had apparently recovered from a depressed fracture of the frontal region. No air was demonstrated in the skull in this case. The closure of the dura was accomplished through the defect made at the previous operation upon a compound depressed fracture involving the right frontal sinus. It was impossible to prevent further tears of the dura in releasing it from the old fracture lines of the base. A perforation of the dura had occurred over the ethmoid sinus on the right side. A large flap of fascia lata was sutured over the dura with closure of the leak and recovery of the patient.

In view of the fact that pneumocephalus may develop weeks after the fracture of the skull, it seems advisable to re-X-ray certain cases of fractures involving the sinuses or mastoid, in which recovery is retarded without reasonable explanation. Some of these cases may show air in the meningeal spaces or ventricles. We have had no suitable case for repair of a dural defect with persistent fluid leaks in which the fracture of the skull involved the mastoid. There appears to be no reason why the same policy of operative interference should not be adopted in some of these cases to prevent infection, as has been found to give the best results in pneumocephalus and cerebrospinal-fluid leaks in fractures of the anterior fossa.

Summary

1. The prevention of epilepsy and headache following depressed fractures of the skull is more likely to succeed if, in addition to the elevation or removal of depressed fragments, such treatment of the injured brain is carried out as will limit the amount of cortical scar-tissue. The treatment of the local brain injury underlying the depressed fracture is of greater importance than the mere elevation of the depressed bone. Compound fractures of the vault require early operation to prevent infection of the brain and to minimize the late bad effects of the local injury.

2. The principles of surgical treatment of compound fractures of the vault for prevention of infection should be extended to certain fractures of the base, in which there is a communication between the meningeal spaces and the sinuses, as shown by a continued cerebrospinal fluid leak or air remaining in the brain tissues and cerebrospinal fluid spaces.

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RADIOTHERAPY IN NON-MALIGNANT CONDITIONS.*

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Popular discussion in the public press has made the general public and the profession

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fairly familiar with the treatment of cancer by means of radiotherapy. Also much has been written regarding the benefit of radiotherapy with radium or roentgen ray in the treatment of malignant conditions. Most of the medical profession are fairly well acquainted with these methods in the treatment of cancer. Few medical men realize the advances that have been made in the last few years in radiotherapy in the treatment of other medical conditions. Because the treatment of cancer has been so widely discussed in non-medical literature, as well as medical literature, physicians have kept up with the latest advances along this line. Probably in the largest and most modern hospitals and clinics, radium and roentgen ray therapy are more generally used at the present time in the treatment of other medical conditions than in treating cancer. The practice of radiotherapy has made so much progress since the average practitioner of medicine left medical school and his interneship that unless he has been in close contact with medical centers he has not had the opportunity to become familiar with the advantages of radiotherapy in many conditions.

So much progress has been made in the last few years in radiotherapy that practically nothing is mentioned in the latest textbooks of this method of treatment, except its application in malignant conditions. The progress has been so fast that textbooks are often out of date by the time they are ready for distribution. It is only by contact with the medical centers and clinics that the best methods of treatment by radiant energy can be secured. This subject is so broad that it will only be possible to review in a brief way the most important non-malignant conditions in which radiotherapy will be useful. Radiotherapy in dermatology is a field within itself and chronic skin conditions will not be taken up in this discussion. However, in passing, I might say, no dermatologist would consider the treatment of many skin diseases without the use of radiotherapy.

Too many medical men are unwilling to try radiotherapy because they do not believe its application is specific and because its results are not always perfect. They seem to forget that we have very few specific therapeutic methods and all results are often doubtful or uncertain as to permanent cure. Radiotherapy will often alleviate and extend the life of a person when there is no other method of treatment. The results, although only palliative, both mentally and physically, are often worth the cost and trouble. Patients' lives may not only be saved but many useful years of life may be added without pain and frequently without worry.

In all cases where radiotherapy is used, the results will depend, in a large measure, upon the ability of the physician rendering the treatment. In this discussion no distinction will be made between the use of radium and the roentgen ray, because either has its use in different conditions and it should be left to the judgment of the radiologist as to the technique to be applied. The radiologist should be a physician well trained in general medicine as well as in radiotherapy, and not just a man who owns some roentgen ray equipment or radium. Probably more harm can be done with roentgen ray and radium when wrongly used than with any other method of treatment, or else insufficient amounts of exposure may be given to do any good whatsoever and thereby delay efficient treatment of a similiar or different nature by other physicians.

In discussing diseases that may be benefited by radiotherapy it will only be possible to mention a few that experience has shown will be helped sufficiently to justify its application. It would take entirely too much time to discuss the technique of application in different diseases. There are many articles in the medical literature discussing at length the application of radium or roentgen rays in any particular condition, and monographs have been written on many of them.

I will take up first those conditions that respond most beneficially to radiotherapy, and those where this is the most useful agent, alone or in combination with other methods of treatment.

All lymphoid structures are very susceptible to radiant energy. Hodgkin's disease and the leukemias, either splenomyelogenous or lymphatic, respond in the beginning to a remarkable extent. The enlarged glands of Hodgkin's disease will melt away in a few days. The treatment will have to be continued, at intervals, over a long period of time. Although radiotherapy cannot cure Hodgkin's disease it can add from five to ten years of useful life to the patient. Radiotherapy has completely replaced surgery in this disease. Hodgkin's disease is more often treated by too

little radiant energy rather than too much. In the beginning the leukemias are equally as benefited and the radiologist will have to get daily blood counts to prevent lowering the leucocyte count too rapidly and too much. The spleen will retract to about normal size and the patient will resume his normal activity for a long period of time, but the symptoms and high leucocyte count will recur with relief by radiotherapy over a period of years. The pathologic leucocytes gradually become resistant to radiant energy, and treatment of no kind is of any avail. Agranulocytic angina, or malignant sore throat with a leucopenia, is receiving considerable attention in the medical literature at the present time. Radiation in stimulating doses is by far the best method of treatment and many permanent cures are being reported in the literature. Persistent thymus in babies or young children may be a serious condition, but the thymus gland can be easily reduced to normal size by a few applications of roentgen ray. In most large hospitals roentgen ray examination of the chest is a routine procedure before operating on young children and, if an enlarged thymus is found, radiotherapy is applied before an anesthetic is given. There are other rare conditions of the chest where roentgen ray or radium is the only efficacious method of treatment. Actinomycosis and blastomycosis, wherever situated, should be treated by persistent radiant energy application. This offers the only hope of relief known to the profession. There are other rare conditions, particularly tropical fungus diseases, which there is no hope to benefit, except by means of radiotherapy. Radiotherapy has already supplanted surgery in the treatment of tuberculous adenitis. These glands, regardless of their stage of involvement, respond exceedingly well to this form of treatment. As in most conditions, the earlier the treatment is started, the quicker results will be secured. The surgeon should be very severely criticised for removing tuberculous glands except under very unusual circumstances. Of course other hygienic measures should be instituted in addition to the radiotherapy because of the tuberculous condition.

For several years there has been a great deal of argument and discussion as to the relative merits of surgery and radiotherapy in the treatment of hyperthyroid or toxic goiters. Removal of such goiters has been the custom for so many years that it has been difficult to educate the general profession to the understanding that radiotherapy is equally and more often beneficial in the treatment of this condition than surgical removal. There are always exceptions but, generally speaking, radiotherapy is gradually replacing surgery in treating these types of goiters. In some of our largest cities more patients suffering with toxic hyperthyroidism as being cured with the roentgen ray and radium than by means of surgery. Some of the strongest advocates of surgery for many years are now willing to admit that radiant energy is equally as satisfactory as the scalpel. The amount of thyroid tissue rendered functionless can be more easily controlled with the treatment extending over a period of time, than by removal at the operating table. If too much of the thyroid gland is removed, the patient will have to take thyroid gland substance for a long period of time, and if too little is removed the patient will have to submit to another operation or else get no relief. Recently I treated two cases of hyperthyroidism, who, a short time before, had had part of the thyroid removed, but had not been relieved of their thyrotoxicosis. In both cases the surgeon had referred the patients to me, frankly admitting, that not enough of the gland had been removed. For a full discussion of the treatment of hyperthyroidism by surgery or roentgen ray I will refer you to many recent articles in the literature covering this field very fully.

There are many benign tumors that are sensitive to radiant energy. Some of them may be remedied with ease, by surgery, but many patients have the greatest fears of even the simplest operation, and although surgery may be quicker and more convenient, yet these patients will not submit to an operation of any kind and prefer radiotherapy when they understand its possibilities. Fibroids of the uterus are now being treated with excellent results by means of the roentgen ray or radium. Where a patient has reached, passed, or is approaching the menopause, and there is the slightest contra-indication to a laparotomy, then radiotherapy is strongly indicated. In younger women, consultations should be had with both a surgeon and a radiologist, regarding the form of treatment best suited. Angiomas and nevi of the skin can be made

to completely disappear by applications of the roentgen ray or radium. This form of treatment is by far preferable to removal and skin graft. Regardless of the size of these large purple birthmarks, if they are treated early, the skin can be made to resume almost its normal color. These unsightly marks can be removed without scar formation, and will relieve the child of a severe inferiority complex which would be a great handicap in his future life. Keloids when removed surgically are almost as likely to recur as they were to come in the beginning. They can be completely removed, leaving only a white scar, by a few applications of radium. The very largest ones, with a red unsightly color, will immediately be improved in appearance by the application of radiant energy. Warts and moles and many superficial benign tumors can be painlessly and easily removed. The same is true with callosities. Leucoplakias will clear up with no difficulty whatever, with only a few applications to the surface.

Inflammatory diseases of both the acute and chronic variety are now being relieved and cured by every radiologist. In a recent article by Desjardins, the entire field of radiotherapy, in the treatment of inflammatory conditions, is reviewed. As above stated all lymphoid structures are very susceptible to radiant energy. In any inflammatory condition, the lymph channels are filled by devitalized lymphocytes, thereby obstructing the path of lymph flow and preventing normal lymphocytes reaching the inflammatory area. A few applications of roentgen ray or radium will completely destroy these devitalized lymphocytes, liberating opsonins, and permitting new lymphocytes to come in and fight the battle. Radiant energy within therapeutic doses has little effect upon bacteria and after an inflammatory process has reached the liquefaction and pus stage, radiotherapy in this area will not produce the good effects that would be secured if earlier treatment was given. Erysipelas, if treated on the day of its beginning and the days immediately following, may be almost completely aborted and always limited to a small field. The pain of herpes zoster can be relieved in a few hours and the lesions will dry up and heal usually within 24 hours from the time of the first treatment. Carbuncles and furuncles will be small and insignificant if the treatment is started quickly, and systematic measures carried out at the same time to improve the general condition. To wait until the central portion has undergone necrosis and pus formation, necessitating an incision and drainage, is poor treatment in the modern care of this painful and sometimes serious condition. When the site of the inflammatory condition is being treated with radiant energy or other methods, the enlarged glands protecting this area should receive at the same time, sufficient radiotherapy to prevent breaking down of the glands and further extension. Any old, chronic, inflammatory process, where the lymph and blood vessels have become obstructed and congested due to the long drawn out condition, will be benefited by radiotherapy. This is especially true of old chronic cellulitis, lymphangitis, chronic phlebitis and chronic adenitis. Many surgical cases where the gross pathology has been removed, leaving a draining sinus, will often heal following a few applications of roentgen ray. Sinuses will close up in a few weeks, normal lymphatic drainage will be established, and the patient will be grateful for a rapid convalescence. Radiotherapy is almost specific in chronic parotitis. Old cases of granuloma annulare that have refused to heal under any form of medical treatment may respond very beneficially to applications of radiant energy. In the removal of tuberculous organs, particularly the kidney and pelvic organs, a tuberculous sinus will remain, unless the area receives radiotherapy postoperatively. At least the field should be given treatment as soon as the sinus shows it is not going to heal.

There are many conditions where different forms of medical or surgical treatment do little good or at least do good in one case and not in another. The type of treatment has to be changed until some method will give relief. Radiotherapy is frequently very beneficial in these cases although the percentage of total relief or cure may not be great. I have seen several cases of trifacial neuralgia that received more relief from roentgen ray treatment than any other kind, except ganglionectomy. One of my last cases received more relief, lasting for several months, from one treatment of roentgen ray than he had ever received from injections of alcohol. Many cases get relief for a long period of time and many others get sufficient relief to prevent a severe and dangerous operation. Some cases are only temporary or only slightly benefited and a few get no results whatever. The same

is true of whooping cough. When radiotherapy is used, the course of the disease is cut short, and the number and severity of paroxysms are markedly lessened. It practically never stops the condition and there may not be noticed at the time any improvement, but a record, when kept, will show the average duration was lessened by several weeks. The pains of angina pectoris are frequently relieved and sometimes recurrences prevented over a variable length of time. The reason for this relief is hard to explain except that it is a well-known fact that radiotherapy will alleviate pain in many cases. Whether the radiant energy deadens the nerve endings, relieves the congestion, or removes inflammatory conditions is not thoroughly understood, but experience has proven that radiotherapy will often produce relief when every other method has failed. Addison's disease has been benefited by deep therapy. The more recent hormone treatment is now producing better results but there seems to be no contra-indication to applying radiant energy to both adrenals at the same time other treatment is being instituted.

There are many upset physiological conditions that are both painful and inconvenient in which radiotherapy is of the greatest benefit. This is especially true in the treatment of menstrual disturbances and in pathologic conditions in the female generative tract. Women who are afflicted with severe cramps and flow, every month may be given almost immediate relief in a short time. Although frequently this condition may be due to poor living conditions and other extraneous reasons, yet they will not be benefited as long as they suffer pain, loss of sleep and appetite. In young women, if the menstrual function is temporarily discontinued, by means of radiotherapy the patient will get her rest, gain strength and weight and, by the time the menstrual function is reestablished, her general condition will be so much improved, the normal physiologic condition will go along in the normal way. Menorrhagia may be the result of a small polyp or other minor pathologic condition, such as small submucous fibroids which radiotherapy will cause to disappear, and the patient will be relieved without a major surgical operation. Elderly patients approaching the menopause have many nervous as well as pelvic symptoms. Maximum doses of radiotherapy can be given, bringing on the menopause rapidly and thereby helping them over a very trying time in life. Instead of the menopause lasting from six months to a year, it can be shortened to a month or two. Because of deformities, poor health and many other reasons, it is frequently necessary that a woman bear no more children. Instead of submitting her to a surgical operation, a maximum dosage of radiotherapy will produce a permanent total castration in a painless and simple manner. A large number of patients can be benefited by radiotherapy during menstrual disturbances by giving them a temporary rest, gain in haemoglobin, and general improvement in health.

There are innumerable instances where favorable results have been secured in a large variety of unusual conditions. Case reports occur in every issue of the radiological journals, of relief or cure in many conditions that have never had radiotherapy previously. Sufficient statistics have not accumulated in these rare conditions to justify conclusive opinions regarding the result of radiotherapy in these cases, but further investigation will determine the value of this agent. For example, favorable results have been obtained in such conditions as hyperacidity, peptic ulcer, and hypertrophy of the prostate. European radiologists are doing considerably more investigative work in the treatment of medical conditions by radiotherapy than in this country. The German literature is especially full of accounts of relief of a large variety of unusual conditions. For example, a recent article discusses the cure of the majority of a large series of cases of congenital pyloric stenosis. Pneumonias are being treated in large numbers. Time does not permit even the mentioning of a large number of cases that are being investigated.

Because of the fear of surgical procedures, the layman is becoming more and more familiar with the advantages of radiotherapy, sometimes more so than his personal physician. Patients frequently come to me asking for relief, having heard of others being helped by radiotherapy and wishing to try it, even when their personal physician, through ignorance, assures them that it will be of no benefit. Cooperation should always be secured between radiologist and referring physician and in many of these cases the patient has to be told that radiotherapy would be of no benefit in his case, but the family physician must keep familiar with the latest methods of treatment else his patient will lose confidence in him.

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THE DIFFICULTIES IN THE DIAGNOSIS OF ATYPICAL CASES OF PULMONARY TUBERCULOSIS.*

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For the past twenty years the deaths from tuberculosis in the State of Virginia have been slowly but surely declining. The Vital Statistics law, requiring all deaths to be reported to the State Board of Health, was enacted in 1912, but it was not until three years later, or in 1915, that reliable figures were compiled which would justify an accurate analysis. During that year 4,003 deaths were reported from all forms of tuberculosis in both white and colored (doubtless many more occurred which were not reported), while during 1930, only 2,224 deaths were recorded. This decrease is more startling when we consider the fact that the population of the State has been steadily increasing and the law requiring the reporting of these deaths has been more rigidly enforced. A fifty per cent reduction of the death rate from tuberculosis during this period of fifteen years would seem a conservative estimate.

What are the factors in operation responsible for this reduction? Obviously, many agencies claim credit for this and must be taken into consideration. The newspapers and magazines carry articles daily on how disease is spread and the prevention of it, and these are read by the laity; the average child in the sixth or seventh grade in school can tell you from his studies in hygiene how to prevent disease, and can name the organisms causing the more common communicable diseases; there is a wide distribution throughout the State, of county, town and city health units and a dissemination of health knowledge by them; the physicians today are more interested in preventive medicine and are teaching it to their patients; campaigns in the early diagnosis of tuberculosis are being waged annually; and medical students are being trained in the finer points of the early diagnosis of the disease. All of these agencies and many others too numerous to mention must share in the glory with our people through this reduction in the death rate from a much-dreaded disease.

Even then is there not room for further improvement? Should we not continue our fight on this disease with renewed vigor through all these routes? The cases applying for admission to the State sanatoria are, as a whole, earlier and offer a better prospect for recovery but there are still too many people being permitted to lose their best chance for recovery through delayed diagnosis and for lack of thorough study of the case. The time allotted to this paper will not permit a detailed analysis of all the finer points in diagnosis, nor the consideration and elimination of all the diseases most commonly confused with tuberculosis in reaching a conclusion. It is hoped, however, that some help may be given and a deeper interest aroused so that the death rate will show a more rapid decline and the diagnosis and treatment not delayed too long for lack of proper application of all available data.

The first part of the paper will deal briefly with the various factors to be taken into consideration in making a diagnosis of tuberculosis in the average uncomplicated case. Routine procedure is necessary to avoid pitfalls along the road. It is not unwise to list these points and post them in your office. They have been referred to often in recent years and given various names: Brown[1] called them "The diagnostic poctulates"; while Henry referred to them as "The diagnostic yardstick." Some cases are so plain that the diagnosis is obvious and it is not necessary to apply all these points, while others are so obscure that all seven points must be worked to the limit in order to avoid mistakes: They may be listed as follows:[2]

1. History.
2. Symptoms.
3. Physical Signs.
4. X-ray Evidence.
5. Tuberculin Test.
6. Laboratory Tests.
7. Exclusion of Other Causes.

History

History-taking is time-consuming and laborious, and not many of us like it. But, often, it furnishes the key to the true condition. Is it not possible that general practitioners are too much inclined to look on the diagnosis of early tuberculosis as hard and requiring great skill and training in the use of the stethoscope, when a well-taken and closely-studied history which they can take as well as any one would be all that is necessary to make the diagnosis? Pottenger[3] says: "In most instances patients

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showing the early signs of tuberculosis present sufficient data for diagnosis to be made by any man who has been well trained in medicine, if only he will bear tuberculosis in mind and carefully study and examine his patient. It is only the exceptional case that offers great difficulty. Probably 80 per cent of cases, as they present themselves, could be diagnosed by a careful study of the history alone."

One of the most important points in the history is to ascertain whether the patient has been intimately associated with any tuberculous person. Remember, a person may have contact with or exposure to an "open" case and yet not contract the disease, but a history of contact in the face of other evidence strengthens your diagnosis. Exposure should have greater consideration in the diagnosis of a childhood case than in that of an adult case, because children are more susceptible to the disease.

Symptoms

It may be said that the onset of practically every case of pulmonary tuberculosis falls under one of six headings from a symptomatic standpoint: Hemorrhagic, pleuritic, febrile, catarrhal, insidious, gastro-intestinal. To consider these from a broader viewpoint, let us divide the symptoms into two classes—local and constitutional.

The Local Symptoms are the result of local irritation of the respiratory tract, or of structural damage of the pulmonary tissue, such as ulceration, cavity formation or hemorrhage. These symptoms are pleurisy, hemorrhage, cough and expectoration, hoarseness and huskiness.

Pleurisy, as indicated by pain, may be mistaken for many ailments. If located in the shoulder and radiating down the arm, it may be called neuritis or rheumatism; if along the lateral chest wall, for intercostal neuralgia; if in the region of the lower thorax, that is, down on the diaphragm, for appendicitis or disease of some of the other abdominal organs. If the thoracic pain is due to pleurisy, it is usually made worse by having the patient breathe deeply for a few times. If the pleurisy be acute in type, the pain is sharp and stabbing; while a chronically-inflamed pleura may cause only burning or dull aching. Pleurisy may precede, by many months or even years, a definite pulmonary lesion, and who has not seen advanced cases who, on close questioning, gave a history of having had "fluid removed from the side" years ago? Pleurisy with effusion, especially in young people, like frank pulmonary hemorrhage should be considered as due to tuberculosis and treated as such until it can be proved otherwise.

Hemoptysis — blood-spitting — may vary from a slight streak in the sputum to a definite hemorrhage of a dram or more. Hemorrhage most often occurs in patients with fairly marked disease, after ulceration and perhaps cavity formation, although sometimes it is the first indication of trouble. When it does occur early, it is fortunate for the patient, as the diagnosis is usually established. It seems useless to say that tuberculosis is the most constant condition causing it.

Cough and Expectoration: It is a common thing for visitors to the Sanatorium to note and comment upon the fact that the patients do not cough. The advanced cases with cavity formation usually cough some but the average minimal or moderately advanced cases do not. Even this condition may exist before the diagnosis is made, or before the patient comes to the Sanatorium and starts treatment. It may be stated that there is no characteristic cough or expectoration of the disease. Catarrhal conditions of the larynx and bronchi may cause cough, and such a condition may go on for months, or even years, and have no significance. But any cough following a "cold" or influenza, which persists for four to six weeks following the infection and will not respond to the average medicinal measures, should be looked upon with suspicion and a thorough chest examination made, as well as a thorough search made of the sputum for tubercle bacilli. This custom will prove a life-saving measure to many patients and, while they may not appreciate it at the time, in later years they will feel a deep and lasting gratitude to you for your thoroughness and frankness. Usually, early in the disease the cough is only noticeable in the morning on rising and is dry and nonproductive but, as the lesion progresses, the cough increases and may become spasmodic in type, and is excited by lying down, laughing, talking, exercise, etc. The sputum at first is mucous in character but as the disease advances it changes to thick, dense muco-purulent material which shows small yellowish spots of pus and cheesy material floating in it. It is these small, dark, cheesy masses which usually contain tubercle bacilli. One case reported here

illustrates the importance of searching the sputum closely for such minute areas for examination (see case report No. 3).

Hoarseness and Huskiness: These symptoms, when present, should always be investigated as to origin. They may be due to a toxic condition affecting the laryngeal muscles, or may be the result of definite laryngeal tuberculosis.

Constitutional Symptoms: These are numerous and are due to the tuberculous toxins affecting the body generally. The most common are fever, tachycardia, anorexia, "indigestion," loss of weight, loss of strength, night sweats, languor and dyspnoea.

Fever: This condition has long been regarded as an important diagnostic aid. Any fluctuation of two or more degrees between the morning and afternoon temperature must be looked upon with grave suspicion. Many cases will show, if the temperature is properly taken, a persistently low-grade afternoon fever (99 to 99.4 degrees F.), long before any other symptoms are present. None but a certified thermometer should be used and it should remain in the mouth ten minutes. The temperature should be taken at least four times a day over a period of ten days, and recorded. The morning temperature should be taken on rising, before the patient has cleansed the mouth or drunk any water. Also, throughout the day, it should not be taken for at least one hour after eating or until there has been thirty minutes' rest after exercise. *These are important points.* The question often arises as to what constitutes fever. It has been variously estimated, but if we consider the maximum normal points of 99 degrees F. in men and 99.2 degrees F. in women, then anything above these should be considered fever. In tuberculosis the temperature may assume any and all of the various types, according to the type and stage of the disease and the bodily response to it, but the most frequent seen is the intermittent type.[4]

Increased Pulse Rate: This, like afternoon fever, may be the earliest symptom of the disease and noticeable long before anything else. Patients will complain that when lying down the heart beats so fast and forceful it shakes the whole bed. In adults, the pulse rate should normally not exceed 75 to 85 beats per minute, when taken one-half an hour after rest following exercise. The pulse rate in early cases of tuberculosis is usually increased out of proportion to the rise in the temperature and may be detectable before any temperature variation develops.

Anorexia and Indigestion: The tuberculous toxins, through their systemic action, seem especially apt to affect the appetite and digestion. In a review of a series of cases coming to this Sanatorium, it was found that 80 per cent had symptoms referable to the digestive system. These varied from a lack of desire for food to a feeling of fullness and heaviness in the epigastrium, eructations, nausea, vomiting and diarrhea. Gastric analyses showed that 48.7 per cent of this group of patients had hypo-acidity.[5]

Loss of Weight and Strength: Early in the disease there may be a gradual loss of weight without apparent reason and this may be accompanied by loss of strength, lack of endurance and fatigue, not relieved by the usual rest. On rising in the morning patients will say that they feel more tired than when they went to bed. Also, along in the afternoon, before quitting work, they get completely exhausted. In some patients it is really hard to determine whether there has been a loss of weight and, if so, how much, because they are not in a habit of weighing and have no idea of what is their usual weight.

Languor: This, like loss of weight and strength, is one of the early "earmarks." This symptom is insidious and can so easily be attributed to laziness or loss of ambition. The entire body is tired and even the necessary duties, such as bathing, dressing, eating, etc., become a burden. A person who has previously been very active and energetic gets indifferent to his work and does not take the interest in life, including his family and his friends, and matters in general, that he once did.

Night Sweats: This is usually a late symptom, coming when the fever is high and extensive softening incident to cavity formation is going on. It may come early, however, and should have due consideration when present. Localized sweating of the hands, feet and armpits is common in the tuberculous, but profuse sweats, occurring soon after the patient goes to bed and being most pronounced around the head, neck and shoulders, have greater diagnostic importance. Fever and chills are often present with night sweats.

Dyspnoea: This may be a local symptom, as when pleural effusion, spontaneous pneumo-

thorax or extensive disease interfering with proper oxygenation is present, or it may be a systemic symptom due to tuberculous toxins.

Physical Signs

There is no question but that, in the past, in the diagnosis of tuberculosis and allied conditions, too much emphasis has been placed on the chest examination. It is very necessary to strip the patient to the waist and make a systematic and thorough search for abnormalities. But, remember, no one has yet gotten sufficiently skilled in the art of physical diagnosis to determine accurately in every case whether there is trouble and, if so, the character and extent of it. Give your physical examination due weight but there should be a correlation of it with the other points—that is, history, X-ray, laboratory tests, etc.—in the final analysis. We must ever keep in mind that patients hemorrhage and even have tubercle bacilli in the sputum without any demonstrable physical signs, regardless of how closely you search and how well you are trained in the use of the stethoscope. The chronic ulcerative form of the disease, with or without cavity formation, will usually give many signs, including rales, but the acute miliary and early exudative forms will not. It is this exudative type which is usually seen in young adults and it is so important to diagnose early, because if the proper treatment is given they offer a splendid prognosis. Inspection, palpation and percussion should be gone over carefully with every case and worked for all they are worth, but it is auscultation which reveals the most real information to the examiner. Due to lack of space, only auscultation, and that in a limited way, can be discussed. Early infiltrations do not usually give signs, except poor breathing over the upper lobe or the apex. If rales are heard, they are very fine and inconstant in type, and may sound extra-pulmonary in origin. There are two very important points to bear in mind in listening for rales: the patient must be carefully instructed in how to cough, and the examiner must move his stethoscope at the proper time or many rales will be missed. Have the patient force all the air out of the lungs (forced expiration), and just at the end of this give one little deep, short cough, followed immediately by a full inspiration. The object of this procedure is to get as much of the air out of the small bronchi and alveoli as possible with the forced expiration so that the lumen of the small bronchi will be lessened and the cough which follows will stir up the secretions and cause the mucus to block the air passages. The air rushing in with forced inspiration, after the cough, meets resistance from the partially blocked bronchi and is forced to bubble through the mucus. Thus we say that mucous or bubbling rales are heard. Many kinds of rales may be heard by this procedure, such as musical or "dry" rales of asthma and bronchitis. The crepitant and subcrepitant rales, especially the former, are not heard so often, as they occur only in such conditions as very early tuberculous infiltrations, early pneumonias and pulmonary infarction, and the mucous and bubbling rales are the ones in which we are most interested. The medium bubbling rale is characteristic of chronic tuberculosis and is identified by its mucous, bubbling quality and by the time it comes during the cough cycle. It is heard either right at the end of cough or during the first half of inspiration following cough. This brings us to the second important point in listening for rales and that is the time the examiner moves his stethoscope. If the stethoscope is not firmly fixed on the chest, it is obvious that the rales will not be heard when they come. Therefore, it should be moved while the patient is in the act of full expiration and pressed against the chest by the time the cough is started, and kept there all through the cough and inspiration following it. The presence of persistent medium bubbling or mucous rales, heard during cough or during the first half of inspiration following cough, above the second rib in front or the body of the fourth dorsal vertebra behind, means tuberculosis until proved otherwise.

X-Ray Evidence

It is now recognized that the proper taking of X-rays, preferably stereoscopic films, is a necessary procedure in the examination of the chest. Definite parenchymal changes are seen in nearly all instances of proved tuberculosis and in many cases, especially the early exudative lesions, it is the only means of making a definite diagnosis. In such instances the physical examination may not show anything abnormal. The cough and expectoration, if present, will be so slight that a specimen for microscopic examination cannot be gotten and the symptoms will not usually be developed enough to be used as a positive factor; thus

the importance of making use of this invaluable aid wherever practicable to do so. Again, a study of the films will reveal the type and extent of the lesion present and these are highly important points and almost essential in making a prognosis. A parenchymatous lesion in an apex is significant of tuberculosis.

Tuberculin Test

In recent years the intracutaneous test of Mantoux has replaced the cutaneous test of Von Pirquet. The reason for this was twofold: with the Mantoux test a known amount of tuberculin is given and a larger number of reactors obtained. The Von Pirquet method is simpler, however, and does not require dilution of the tuberculin, nor a syrings and needle to administer it. The latter is worth consideration in administering the test to children, as they are apt to be afraid of the needle. Old tuberculin is the preparation used in diagnosis and the first dose is usually 0.01 mgm., administered intracutaneously. If this gives no reaction, an injection is given every 48 hours, increasing the dose up to a maximum of 1 mgm. (first dose 0.01 mgm.; second dose 0.1 mgm.; third dose 0.5 mgm., and last dose 1 mgm.). A pocitive test is one that shows edema and redness of varying degree within 48 hours. Tuberculin is sometimes given subcutaneously and intramuscularly to adults, although this method of administration carries some risk of a severe general and focal reaction, and should perhaps be confined to those experienced in its use. The intracutaneous test has greater value in childhood diagnosis but in some cases of adults it may prove a strong link in the chain of evidence. A positive reaction always means the presence of tuberculous infection, but a negative test does not necessarily exclude tuberculosis. Acute infectious diseases, acute miliary or generalized tuberculosis and other conditions may cause the test to be negative.

Laboratory Tests

Excluding the sputum, there are no laboratory tests which will materially assist in the diagnosis of pulmonary tuberculosis. In recent years laboratory men working with the blood of tuberculous patients have reached certain conclusions and have published much data on diagnosis and prognosis, but their work has only been partially accepted. As to the sputum, the morning specimen is best for examination, because during the night the bronchial secretions have accumulated while the patient has been sleeping and they are more apt to contain the bacilli. The small cheesy masses floating in the sputum should be used for the smear. Too much importance should not be attached to one, or even many negative examinations, especially in the face of other suggestive evidence. Where several specimens have been negative for acid fast bacilli by the direct method of examination, it is advisable to use the concentration process, as this will give a higher percentage of positive findings. The presence of tubercle bacilli in the sputum, of course, clinches the diagnosis and it is one of the most important of the six diagnostic factors, particularly when positive. No patient's life, however, should be sacrificed while waiting for a positive sputum when there is other evidence pointing to disease. Remember, that the earlier the diagnosis, the better the prognosis, and that only 8 per cent of the minimal cases[10] coming to this Sanatorium have bacilli in their sputum. Animal inoculation, with either sputum or fluid from wet pleurisy, has great value and should be used wherever practicable.

After a thorough study and correlation of the six factors mentioned, History, Symptoms, Physical Signs, X-ray, Tuberculin Test and Laboratory Tests, we come to the final analysis. In order for a definite diagnosis to be made, at least one of these points must be present. For convenience, they may be listed under four headings in the order of importance and called: Minimum Requirements for Diagnosis[2]—(a) the finding of tubercle bacilli in the sputum, with rare exceptions, is in itself diagnostic; (b) definite and persistent medium bubbling or mucous rales, heard with cough, or during inspiration following cough, in that part of the lung field located above the second rib in front or the body of the fourth dorsal vertebra behind; (c) demonstration on X-ray films of a definite parenchymatous lesion, located above the second rib in front or the body of the fourth dorsal vertebra behind; (d) pleurisy with effusion, or hemoptysis, not otherwise explained, justifies a provisional diagnosis and a careful study over a period of months or even years for further evidence of the disease.

Exclusion of Other Causes

We now come to the second part of the

paper and the consideration of the seventh point, "Exclusion of Other Causes." Many conditions may of course be confused with tuberculosis, but only the most common will be mentioned. They are: Lung abscess, bronchiectasis, lung tumors, fungus infection, pneumonoconiosis, nasal sinusitis, carious teeth and diseased gums, Malta fever, tularemia, toxic goiter and endocarditis.

Lung Abscess: Pulmonary abscess is usually a localized focus of infection within the lung substance, accompanied by suppuration and necrosis of the tissue. It should be differentiated, if possible, from suppurations confined within the lumen of the bronchial tree, such as bronchiectasis. In an abscess of long standing, multiple and extensive in character, there is usually some bronchiectasis associated with it. Also, in bronchiectasis of long standing, there is apt to be some pulmonary suppuration present.

The condition cannot be considered common and is perhaps on the decline. It is seen too often, however, and every possible precaution should be taken to further reduce the incidence. Marietta[7] reports 17 cases among a total of 10,570 patients admitted to Fort Sam Houston over a period of 28 months. Pincoffs[8] reports 34 cases of abscess of the lung among patients admitted to the two hospitals connected with the medical school of the University of Maryland over a period of 5 years. Crowe[9] reports no abscesses, following the removal of tonsils under general anaesthesia, among 3,500 cases at Johns Hopkins Hospital over a period of 12 years.

Lung abscess is always secondary; that is, with few exceptions where suppuration does occur primarily in the lung. Therefore, the exciting factor is the lodgment of infectious material at some point in the pulmonary tissue, or the implantation of certain pus-producing micro-organisms in areas where tissue resistance has already been lowered by disease, injury or circulatory disturbances. The causative factors have been variously classified by different authors. All seem to agree on at least one point, which perhaps ranks first, and that is the entrance of infection through the lumen of the bronchi, such as infections involving the respiratory mucosa (lobar pneumonia, bronchopneumonia, influenza, etc.), or infection through the aspiration route of foreign material, as following a tonsillectomy, the extraction of teeth, an operation on the nose, sinusitis, etc. Other causes are infected emboli from operations and a certain percentage of all cases must fall into the idiopathic class. The micro-organisms found, like the causes of abscess, are variable. Streptococci, staphylococci (especially aureus), pneumococci, influenza bacilli, Vincent's organisms and fungi have been reported. A mixed bacterial flora is common and, from a search of the literature, it would seem that the pus-producing cocci, particularly streptococci and staphylococci, are most commonly found.

Abscesses are classified as acute and chronic, singular and multiple, peripheral, central or mesial, and as being located in the right or left lung, upper or lower lobe, etc. The location has an important bearing on differential diagnosis and, while abscess may occur in the upper lobes, it is far more frequent in the lower lobes. Great care should be exercised and an application of the diagnostic yardstick made before calling a lesion in the upper lobe an abscess, especially above the second rib, regardless of the history of sudden rupture and expulsion of a quantity of pus following a tonsillectomy or the extraction of a tooth. A dormant tuberculous area may be and often is reactivated by some surgical procedure and made to look clinically like an abscess. (See Case No. 7.)

The symptoms and clinical picture will depend upon whether the abscess is acute or chronic, and whether it has ruptured through into a bronchus and is draining. The symptoms are usually essentially those of an acute pulmonary infection, with marked constitutional disturbance, and accompanied by profuse expectoration of fetid sputum. The fever ranges in active cases from 100 to 103 degrees F. Sweating and chills are present and these, like fever, are apt to become more pronounced during the periods of acute exacerbations when bronchial drainage has temporarily stopped. The cough varies in degree but is present in all cases. In the early stage it is non-productive but after the abscess ruptures it is paroxysmal in character and is accompanied by profuse expectoration which has a foul odor and a sickening taste to the patient. Blood streaks in the expectorated material are rather common but frank hemorrhage is rare, except occasionally at the time of the rupture of the abscess. However, two of Crowe's[9] dogs died

of hemoptysis six weeks after he had produced pulmonary abscess experimentally. Pain in the chest, according to Cole,[10] is an outstanding symptom and frequently the first to be noted. This will depend upon the location of the abscess and the amount of pleural involvement.

In the diagnosis the application of the yardstick is necessary to accurately determine the true status of the atypical cases and to differentiate them from tuberculosis. A detailed history as to the character of onset of the present condition, with special reference to the state of the patient's health previous to the present disease, must be taken. History of exposure to tuberculosis should have some weight and it is of course possible to have the two lesions coexisting, although it is believed to be rare. Clerf[11] says: "Abscess of the lung seldom accompanies tuberculosis. In but two cases observed at the Bronchoscopic Clinic was there found tuberculosis with pulmonary abscess." The location of the lesion, with tuberculosis usually in the upper lobe, and abscess usually in the lower lobe, as revealed by physical signs and X-ray, is of some help. There are no characteristic X-ray findings, but this aid is invaluable. In addition to stereoscopic films, lateral and oblique films may be helpful, as well as the use of the fluoroscope. A localized softened area with indefinite walls, with a fluid level in the center, which is surrounded by a zone of pneumonic consolidation, as revealed on the films, especially if located in the lower part of the lung field, should be considered an abscess. The physical signs are not very characteristic, only serving to show, as a rule, the presence of a localized area of involvement in the lung. There may be signs of scattered areas of consolidation and moisture, with a pleuritic friction rub. The rales, if present, are not the typical medium bubbling type heard in tuberculosis, but are more inclined to be musical in class, originating in the adjacent bronchi, with the "gurgling" type heard over the abscessed area. The sputum should be repeatedly examined for tubercle bacilli and, if practicable, the sputum cultured and animal inoculation done. Elastic fibers, pus and epithelial cells are commonly found microscopically. The blood picture in abscess, as differentiated from tuberculosis, is characteristic. In abscess there is polymorphonuclear leucocytosis which in the acute stages may reach 15,000 to 20,000, while in tuberculosis there is a leucopenia, with an increase in lymphocytes. Exceptions to this rule are in acute types of tuberculosis and in advanced cases where liquefaction and cavity formation are taking place. Then there may be a leucocytosis and an increase in polymorphonuclear cells the same as in an abscess. The tuberculin test may be given but a note of warning should be sounded as to the interpretation, since under normal conditions a majority of adults give a positive reaction. Also, if the patient is running fever, the test may be negative, even in the presence of clinical tuberculosis. Much has been said in the past few years in regard to bronchoscopy in the diagnosis and treatment of lung abscess. We believe that the use of the bronchoscope in tuberculosis is harmful. There is danger of hemorrhage and extension of the disease from its use. In the two cases reported herein where it was used, the disease spread, as revealed by the roentgenograms, and the sputum became positive for tubercle bacilli (cases 6 and 7). This is contrary to Clerf's[11] belief and he states that in a large group of tuberculous patients who were bronchoscoped no ill effects were noted. He does state further that in advanced cases, and where there is a tendency to hemoptysis, bronchoscopy is contraindicated. In abscess bronchoscopy is valuable and, after tuberculosis has been definitely excluded, its use will prove helpful in diagnosis.

Bronchiectasis: This condition, as stated above, may be very difficult or impossible to differentiate from abscess, due to its similarity, or the two may coexist. The onset of bronchiectasis is more gradual and the septic manifestations are fewer. The sputum is abundant and is apt to be foul. The cough and expectoration are marked and are affected by change in posture. These patients usually have little or no fever and the blood picture is within the normal range (absence of leucocytosis). The causes for the bronchial dilatations have been variously stated. These range from obstruction to the bronchial lumen by foreign bodies, tumors, viscid mucous plugs and pressure from enlarged lymph nodes, to chronic infections located in the bronchi and in the upper respiratory tract, such as chronic nasal sinusitis, etc. All cases of suspected bronchiectasis should have the nose and throat examined for infection and, if necessary, the accessory nasal

sinuses X-rayed, as this is the most common source of chronic non-tuberculous pulmonary infections.

The history may be that of a very chronic disease, often beginning in early childhood with symptoms of only moderate severity, extending over many years and perhaps never reaching the point of producing complete invalidism. The physical signs are those of a low-grade chronic infection located in the root regions and the bases of the lungs. The breathing may be poor, and large bronchial rales are heard, both during normal breathing and on inspiration following expiration and cough. The physical signs in the apices are within the limits of normal. The X-ray shows a chronic basal infection, with dilated bronchi often appearing on the films as "ringlets." The physical and X-ray findings, basal in location, and repeatedly negative sputum examinations for acid fast bacilli, will enable one to exclude tuberculosis with a fair degree of accuracy. Then the introduction of iodized oil into the bronchi, followed by X-ray films which show dilatations of the bronchi filled with opaque oil, appearing as "clubbing," complete the diagnosis of bronchiectasis. The symptoms, etc., may suggest bronchiectasis but the only definite means of making an accurate diagnosis is by X-ray films following the introduction of iodized oil.

Nasal Sinusitis, Carious Teeth and Diseased Gums: Sinus infection, in recent years, has become a common ailment of mankind. Prior to this it no doubt was equally as prevalent, but the profession had not recognized it, and it was masquerading under the title of "catarrh of the nose and throat." The causes of this disease have been listed by Martin and Dickinson[12] as follows: (1) infectious; (2) nutritional and metabolic; (3) allergic; (4) mechanical. Since infectious sinusitis predominates, it is the only form which will be considered here. Common "colds," influenza and the acute infectious diseases, such as measles, whooping cough and scarlet fever, produce an acute inflammation of the upper respiratory tract, and this extends from the nose into the accessory sinuses, where it may become chronic and eventually produce a pansinusitis. Such a condition may take place in early childhood, remain through the period of adolescence and into adult life, causing frequent attacks of "head colds" which are followed by "bronchial attacks," being worse in winter than in summer. In this way a "chronic bronchitis" develops, which is potentially a bronchiectasis. These cases commonly develop acute ear infections in childhood and after many attacks they pass into a state of chronicity in adult life, with permanent impairment of the hearing. As to the mode of extension of this infection from the sinuses into the lungs, two theories have been advanced, one by the lymph stream route, and the other by direct aspiration through the air passages. The latter route seems to be most plausible. The diagnosis and differentiation from tuberculosis depend upon physical examination, X-ray findings, history and sputum examination. The sputum is negative for acid fast bacilli; the symptoms are mild as compared to tuberculosis; hemoptysis is rare and fever, if present, will be slight, with an absence of the characteristic afternoon rise in tuberculosis. The physical signs show nothing except numerous musical rales, beginning in the root regions of the lungs and extending into the bases, and are essentially those of a low-grade chronic bronchitis. The X-ray findings are either absent, or show only widened root shadows, with some thickening of trunks, especially in the lower lobes. The heavy beaded and interwoven trunks in the apices or the appearance of a "fan," suggestive of early tuberculosis, are absent.

Carious teeth and diseased gums are common causes of lung infections, such as bronchitis, bronchiectasis and abscess. Crowe[9] took fresh scrapings from the mouths of patients having pyorrhea cavities and introduced them into the bronchial passage of dogs, and produced abscess. Chronically inflamed tonsils may, by aspiration of the infection into the lungs, also cause bronchitis. We often see this condition in our patients at the Sanatorium, especially in the children. To prove that this is the cause, following a tonsillectomy the pulmonary infection entirely disappears.

Tumors: Not until one attempts to review the literature on neoplasms of the lungs does he realize how voluminous it is and the mass of contradictory and confusing statements made by various authors. The incidence is not believed to be any higher, but closer study of the cases and better means of diagnosis are probably responsible for the recent increase in articles on the subject, with report of cases. The chief interest seems to center on malignant tumors, especially carcinoma, and, according to the literature, they are more prevalent, but

this brief discussion will deal with all forms. New growths of the lungs may be classified as benign and malignant; primary and metastatic; and, as to location, endo-bronchial, intralobar, mediastinal, pleural, and in the ribs, with extension to the lungs. As to the cause, no one of course knows, but many theories have been advanced, such as previous irritation, as from a chronic inflammation of the bronchial mucosa produced by diseases such as influenza, chronic bronchitis, bronchiectasis, atelectasis and tuberculosis. Also, the non-disease irritants listed are inhalation of dust from tarred roads, radio-active dust in miners, and stone-masons. Many authors have tried to prove that carcinoma and tuberculosis do not coexist but the belief is erroneous and without proved facts. Von Glohn,[13] from the department of pathology, College of Physicians and Surgeons, Columbia, reports two cases that went to autopsy who had primary carcinoma engrafted in old tuberculous foci. Miller and Jones,[14] of Bellevue Hospital, reported on 32 cases of primary carcinoma of the lungs, which went to autopsy, and they also believe they coexist. The incidence as to sex and age varies. Miller and Jones found it 3 times more frequent in men than in women, and their ages ran from 25 to 70 years, with an average of 49 years.

Symptoms and Diagnosis: The onset is insidious. The local symptoms are apt to be equally as pronounced as those in tuberculosis but the constitutional symptoms are decidedly less. Cough is present in nearly all cases but expectoration is slight, unless the tumor is under going degeneration, when it will be profuse and perhaps foul-smelling. Hemoptysis is not as common as it is in tuberculosis but it is frequently noted in the latter stages. Pain in the chest is in proportion to the amount of pleural involvement and will be present some time during the course of the disease. Loss of weight, weakness, anorexia, fever, clubbed fingers and cachexia will make their appearance in due time. The physical signs will depend upon the size of the tumor, the location and the stage of advancement, but usually they will be either absent or those of some bronchial irritation, as bronchitis. Pleurisy, either with or without effusion, is not uncommon, especially if the tumor is intralobar or pleuritic in location, and when accompanied by fluid, if blood-tinged, is said to favor malignancy. Dunham, of Cincinnati, believes that, in the fluid cases, to remove the fluid and centrifuge it at high speed, and to examine the sediment microscopically, will often show cancer cells. If any sputum is present, it should be examined for acid fast organisms. The age of the patient must be considered and a thorough search made for malignancy elsewhere in the body, as metastasis to the lungs may take place. The two most important aids in the diagnosis of this condition, after all, are X-ray and bronchoscopy. Serial X-ray films may be necessary in order to note changes in the size and general appearance of the opacity in question, and radiograms from different positions should also be made. The bronchoscope is invaluable and should be used wherever accessible. The case of endobronchial carcinoma reported here (case No. 10) could not possibly have been diagnosed except by the use of the bronchoscope and, through it, the section removed for microscopic examination.

Toxic Goitre: The differentiation of toxic goitre and early pulmonary tuberculosis has long been considered a difficult problem; perhaps not so much today as it has been in the past, due to laboratory developments in the line of basal metabolism instruments and modern X-ray equipment. Stewart Roberts[15] says: "Let a young individual, especially a woman of eighteen to thirty present herself for examination, with a visible thyroid, or one lobe easily palpable, a rapid pulse, a slight fever, a history of lassitude and weakness, and easy perspiration, and one's diagnostic mind faces action and decision." Add to this picture increased metabolic rate, tremor, Rosenbach's sign of a coarse tremor of the upper lids when the eyes were closed, easily excitable heart, with acceleration and palpitation, negative physical signs and negative X-ray findings of the chest, and the diagnosis of hyperthyroidism is complete. Roberts believes that blood pressure readings are helpful and states that in tuberculosis the pulse pressure is apt to fall to below 40; whereas, in goitre, there is a large cardiac output associated with the increased metabolism and the pulse pressure is increased up to 60 or more points. After all, the final conclusion in differential diagnosis will depend upon the X-ray of the chest, basal metabolism test, history and symptoms of the case.

Malta or Undulant Fever: This condition

has been fairly prevalent in this locality for the last few years and its diagnosis is occasionally confused with that of early tuberculosis, which explains why it is included. The onset of Malta fever is gradual and the outstanding symptom is fever without an apparent cause, simulating not only miliary tuberculosis but typhoid. The fever often goes as high as 103 degrees and 104 degrees F. and a noticeable factor is the tendency to decline, only to be followed within a few days by another rise, with a relapse. "Indigestion," headache and joint pain are present. In severe cases the spleen is enlarged and the lungs are apt to be congested, showing patches of consolidation and perhaps pleurisy with effusion. The disease may be contracted in various ways. The most common in this country is by drinking milk from infected cows or goats. Some claim that infected hogs are the source of many cases. The positive points in diagnosis are the agglutination test and cultures.

Tularemia: With the recent advances in our knowledge of tularemia, it has been noted that its pulmonary manifestations may simulate tuberculosis. This is not surprising when it is recalled that focal necrosis is the fundamental pathologic lesion in both diseases. Pleural effusion, pulmonary consolidation, pulmonary cavitation and bronchitis have been reported in cases of tularemia. Blackford,[16] of the University of Virginia Hospital, reported 13 cases of tularemia and stated that 6 of that number had manifestations referable to the chest, which caused difficulty in differential diagnosis. One case Blackford had (personal communication), not included in the above list, died and went to autopsy. There was found extensive pulmonary damage due to multiple pulmonic thrombi, with attending areas of necrosis probably attributable to the tularemia infection and believed to be of prime importance as a cause of death. Physical and X-ray signs of this condition, where there are pulmonary manifestations, may and often do simulate tuberculosis but the agglutination tests will differentiate it. That relatively few cases of tularemia are mistaken for tuberculosis is shown by the work of Dr. G. Foard McGinnes, of the Virginia State Department of Health, who tested the sera for tularemia of 115 non-proven tuberculous suspects in the State sanatoria and did not find a positive agglutination among them.

Pneumonoconiosis: A combination of fibrosis and pigmentation of the lungs, due to the inhalation of minute particles of dust, is known as pneumonoconiosis and often called miners' phthisis. The constant inhalation of the irritating dust particles causes lymph stasis and provokes proliferation of the connective tissue elements, eventually resulting in fibrous overgrowth and an indurated mass of the entire lung tissue. There are several different types, due to the kind of dust inhaled, such as: anthracosis, from coal dust; siderosis, from the inhalation of fine particles of metal—iron and steel; silicosis, from sand; kaolinosis, from plastic clay-workers. As a result of some resent work done on miners in South Africa, it was found that the pulmonary fibrosis was due largely to the associated silica dust. Pancoast and Pendergrass[17] are of the opinion that the inhalation of silica dust in mining is responsible for practically all lung fibrosis, or miners' phthisis, even in those working in coal mines, and they suggest that the term "silicosis" be used.

The amount of dust to which the workers are exposed in these dust trades and the length of time in years seem to be the two factors which will determine the development of the disease. The installation of modern mining machinery has caused an increase of the dust hazard. It has been found that those who operate pneumatic drills and are working in a fog of dust all day long will develop severe lung changes within 4 or 5 years, while those less exposed to the dust will go for from 10 to 12 years before disability begins. This condition, according to the extent of pulmonary changes, i. e., fibrosis and the degree of disability, has been classified into three stages—one, two and three. In stage one there are only slight pulmonary changes. These are confined mostly to the root zones of the lungs, cause no symptoms worthy of note and are recognized only by an X-ray of the chest. In stages two and three there is more marked fibrosis, with definite impairment of the general condition, and disability. Especially is the latter noted in the third stage.

The subject of pneumonoconiosis and tuberculosis being closely allied has brought forth much discussion. At one time pneumonoconiosis in its advanced stage was regarded as tuberculosis. More recently it has been thought by some, whose work has been limited to certain

dust industries, that the condition protected the individual, in a measure, against the development of tuberculosis. Be that as it may, the fact remains that a large number of people with advanced pneumonoconiosis continue to develop tuberculosis as a terminal stage disease. It may be that the disabling effects of pneumonoconiosis, plus poor hygienic surroundings, produce a fertile field for the development of tuberculosis.

The symptoms will depend upon the stage of the disease but dyspnoea seems to be the first noted and increases in severity as fibrosis advances, finally becoming urgent over a period of years and causing disability. There may be a loss of weight but, as a usual thing, the patients look well until the latter stages. Cough is moderate, with slight expectoration, and a wheeze, not unlike asthma, often develops in the terminal stage. Pleurisy pain is almost always present over the pulmonary bases. The physical signs are usually slight and by no means indicate the extent of pulmonary impairment, X-ray films being necessary for this. There is limitation of expansion over one or both sides. Slight impairment on percussion is the rule over the root zones and the upper lobes, with distant breath sounds. Rales, if present, are apt to be the fine moist type over the upper lobes, and the musical kind heard over the root zones and bases. A basal pleurisy rub is not uncommon.

As to the diagnosis, there are three points which should be considered where pneumonoconiosis is suspected and if they are present they will usually greatly assist in reaching a conclusion. They are: (a) dyspnoea, which is the chief complaint and out of proportion in severity to the other symptoms; (b) history of having worked in the mines and having been subjected to the inhalation of excessive dust for a period of several years; (c) positive X-ray findings. It is the latter point which will not only reveal the disease but will show the extent of it. In the first stage only heavy root shadows, with thickened trunks, are seen on the films; but as the disease continues there appear along the course of these heavy trunks, extending from within outward, small, uniform, symmetrically arranged, mottled areas ranging in size from a pinhead to a pea, being due to small, fibrotic nodules. This is the second stage and at this point some one, due to the distribution of the disease extending off from the hilum into the lung field, has drawn an analogy to that of a bat with its wings spread, hence the term "bat-wing" distribution. The mottling is apt to be more noticeable in the right lung, due to a greater portion of the inhaled dust going into this side. Fibrosis continues, the mottled areas get larger and coalesce into zones of consolidation extending both upward and downward, eventually involving the greater part of the lungs and obstructing the excursion of the diaphragm by pleuritic adhesions. This, of course, is the third stage. One interesting feature of this disease is that when once well established the fibrosis continues throughout the lung, eventually leading to disability even though the miner quits this dusty trade and takes up another occupation. With a disease-producing pulmonary pathology, such as pneumonoconiosis, it is of course difficult, especially in the third stage, to differentiate from tuberculosis. The problem is more difficult when we consider that the two often coexist in the terminal stage. Repeated sputum examinations for tubercle bacilli, history and occupation, and thorough study of the X-ray films should prove the deciding points.

Fungus Infection: Fungus infections of the lungs have probably been overlooked many times up until recent years, although Castellani[18] described this condition in Ceylon in 1905. Since then much work has been done on this infection. There is no doubt that nonpathogenic fungi exist in the mouth and throat of some individuals and also in old bronchiectatic cavities and advanced tuberculous lesions where desirable culture media are present; hence, care must be taken in cleansing the mouth thoroughly in all cases before collecting specimens. When infection is found, direct and concentrated examination of sputum for tubercle bacilli should be done and animal inoculation experiments carried out in order to determine the pathogenicity of the fungus. In our routine examination of specimens of sputum at the Sanatorium, several cases have been found which showed constantly present yeast-like organisms. These organisms were present chiefly in free budding forms, but mycelial threads were also found in the direct smears. A rich growth was obtained on Sabouraud's media and simple dextrose agar. The organism grown on agar produced chiefly budding forms but, on gelatin stab cultures, produced an abundance of branching septate filaments and

the oval forms (conidia). These organisms conform to the description of the fungus of the genus Monilia, of which there are many species.

Fungus has been found constantly in the sputum of three of our cases who failed to show tubercle bacilli after repeated direct and concentrated sputum examinations (see case No. 12). The physical signs and the X-ray findings are usually slight, showing a perference for the lower part of the lungs. There may be pleural and scattered moist rales, and the X-ray reveals heavy trunks and perhaps mottling and light consolidation. These cases are being studied as possible cases of broncho-moniliasis. It is understood that the isolation of fungi from sputum is, of course, no proof that they have produced the clinical condition of broncho-moniliasis. However, repeated absence of tubercle bacilli and other organisms suggests etiologic relationship. Careful clinical study of cases and animal inoculation to determine pathogenicity of the fungus is necessary to reach a decision as to the presence of this disease. Animal experimentation with fungus from cases of broncho-moniliasis are said to show tubercles resembling those produced by the tubercle bacillus, but with the fungus present instead of tubercle bacilli. Cases of broncho-moniliasis, because of their similarity of history and clinical course to that of pulmonary tuberculosis, are apt to come under our observation. The symptoms vary but usually are milder than those seen in tuberculosis. A number of interesting cases have already been reported. Castellani[18] first reported the condition in Ceylon in 1905. Stokes, Kiser and Smith[19] reported two cases of bronchomycosis in 1930, in which there was extensive chronic interstitial fibrosis of the lungs. Tubercle bacilli were not demonstrated in the sputum but a form of yeast was found which showed morphological and cultural characteristics resembling Monilia albicans. The pathogenicity of this fungus was determined by animal inoculation. Shaw[20] reported, in December, 1930, a case of broncho-moniliasis which had been diagnosed tuberculosis from the X-ray and physical findings. He could not find tubercle bacilli either by sputum examination or by guinea pig inoculation. The sputum did show, however, small, firm, white granules and yeast-like bodies which, when planted on maltose agar, produce monilia in isolated form.

Endocarditis: Of the heart diseases apt to be confused with tuberculosis, subacute bacterial endocarditis and mitral stenosis are the most common. The former not infrequently presents a low-grade fever in its early stages. This is the chief reason for its confusion with tuberculosis. However, the occurrence of emboli, the enlarged spleen and the progressive anemia soon indicate the nature of the disease. More important than these is the fact that bacterial endocarditis almost invariably occurs on old chronic valvular heart disease, and may be readily diagnosed by accurate physical examination.

Hemoptysis takes place often enough in mitral stenosis to cause confusion with the blood-spitting of tuberculosis. Generally, the hemorrhage from mitral stenosis comes about after violent exercise or with heart failure. Seldom should the examination fail to detect a mitral stenosis sufficient to produce hemoptysis. With the discovery of mitral obstruction, considerable evidence is necessary to prove that pulmonary hemorrhage is of tuberculous origin, but we do know now that tuberculosis and mitral stenosis may be seen together, and that it is possible for one patient to have both conditions.

A few cases are included here, with a brief summary of the histories, which illustrate common errors in diagnosis. Had there been a thorough application of all of the seven diagnostic points as listed above, the mistakes probably would not have been made.

Case 1: J. N. B.; age 25; occupation, auditor. Family history negative; usual diseases of childhood; no other diseases of any importance. Only history of exposure was that he was intimately associated at work with a bookkeeper who died from tuberculosis in 1929. *Present illness:* In the early summer of 1930 he noticed that he tired easily and was losing some weight, and on account of these symptoms he went to a consultation clinic for a complete physical examination. His chest was considered negative at that time and he was told that he had some diseased tonsils which he should have removed. One month following this (July, 1930), on arising one morning he began to cough and expectorated about three drams of blood. This was followed, within about an hour, with another small hemorrhage. Thinking that this blood was coming from his throat, he went to a specialist for a tonsillectomy, and the specialist referred him to this Sanatorium for an examination. Chest examination at that time showed nothing of importance except some poor breathing in the upper lobe of the right lung. X-ray, however, showed consolidation and honeycombing between the second rib and fourth rib on the right, and a diagnosis of tuberculosis was made. He was admitted to Blue Ridge Sanatorium a few days later and for some time continued to expectorate a small amount of blood.

Laboratory tests: Sputum examinations negative for tubercle bacilli, but patient had very little ex-

pectoration and specimens obtained were not satisfactory; blood, urine and feces were negative.

Remarks: There was nothing of diagnostic importance in this case except the X-ray findings. The physical examination was practically within the limits of normal but had this case been X-rayed earlier a diagnosis would have been made. Two of the outstanding points in the case, either one of which would have justified a diagnosis, were hemoptysis and parenchymatous X-ray lesion in the upper portion of the lung.

Case 2: Mrs. L. B. T.; age 36; occupation, housewife. Admitted to Blue Ridge Sanatorium April 8, 1931. *Family history:* Mother and one sister died from tuberculosis. *Past history:* Was rather delicate child and recovered slowly from the usual diseases of childhood. Had had repeated attacks of bronchitis since age of 14. *Present illness:* In 1919, while in a poor condition generally, she developed a "deep cold" and following this had a small hemorrhage. She was sent to a tuberculosis institution in another state but remained there only a short while, as they could not get sufficient evidence in the case to justify a diagnosis of clinical tuberculosis. When she came to this Sanatorium, the physical examination of the chest and the X-ray findings were considered normal; but the positive factors in her history could not be ignored and it was thought advisable to observe the case for awhile. She insisted that she had no expectoration but on closely observing her it was found that she had some small cheesy masses in her sputum and repeated examinations of these revealed that they contained tubercle bacilli. After remaining here awhile she developed some symptoms referable to the abdomen, which were suggestive of tuberculous enteritis. Examination of her stools on several occasions revealed acid fast bacilli.

Remarks: The important points in this case are the history and laboratory tests which were the factors that enabled the diagnosis to be made, the physical and X-ray examinations being negative. The patient undoubtedly has clinical pulmonary tuberculosis and perhaps a tuberculous enteritis as a complication. Had the history not been gone into thoroughly and the sputum repeatedly studied for acid fast bacilli, the case might not have been diagnosed.

Case 3: Miss N. E. F.; age 25; occupation, teacher *Family history* negative. No known exposure to tuberculosis. *Past history* negative. Patient was admitted to Sanatorium March 5, 1929. *Present illness:* Four years ago, while at college, was playing hockey and was seized with sharp pains in the lumbar region of the back. She was thought to have a strain and was treated for such, but the pain continued and she began to lose weight and get in a generally rundown condition. Her family physician could find nothing in her chest but finally succeeded in getting a specimen of sputum for examination. This was reported as containing tubercle bacilli. She was sent to the Sanatorium with a diagnosis of tuberculosis. Physical signs over her chest were well within the limits of normal and the X-ray showed nothing except some small calcium deposits scattered throughout both root zones. The diagnosis of tuberculosis, which had been previously made by the family physician, was doubted, but the case was kept under observation and it was not until several weeks later that we could get a specimen of sputum for examination. This, like the above case, had some small, dark, cheesy masses floating in what appeared to be saliva. These were examined and repeatedly showed tubercle bacilli Her X-ray films were sent to Dr. Morris McPhedran, of Philadelphia, who located a small calcified mass, surrounded by a delicate zone of fuzzing, in the peripheral zone of the lung field on the right, which he believed was responsible for the positive sputum.

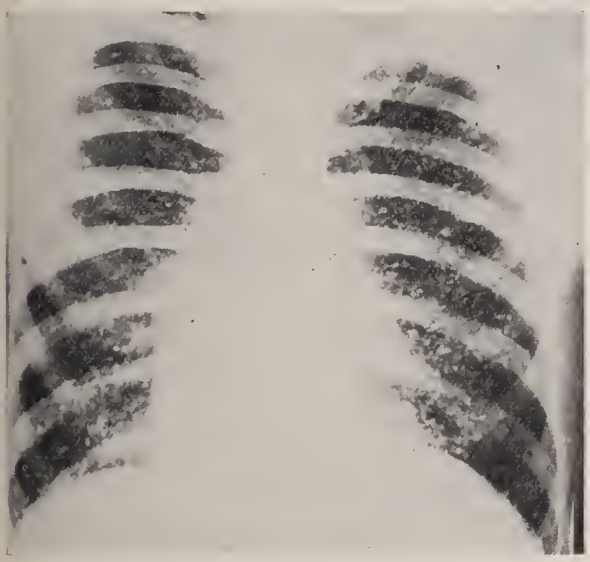
Remarks: This case was interesting because, as in case 2, the diagnosis was doubted for the reason that the physical and X-ray were apparently negative, and there were no points in the history that we considered of any significance. But the sputum examination enabled us to confirm the diagnosis which had been made by the family physician before the patient was sent to the Sanatorium.

Case 4: C. W.; age 15; occupation, student. Admitted to the Sanatorium February 7, 1929. *Family history* negative from standpoint of contact with tuberculosis. *Past history:* Usual diseases of childhood, with good recovery. *Present illness:* Parents noted child's general condition was not as good as it should be, that he was not gaining weight and that he was beginning to fail in school. Periodical routine rest periods and forced feeding did not seem to cause any change in his condition. He was sent to a clinic, where a complete physical examination, including laboratory tests, was made. (X-ray examination of the chest was omitted.) Nothing could be ascertained by the clinic except the boy was much underweight and in a poor condition generally. Soon after this he developed some skin lesions on his back and shoulders, which gradually grew in size and number. He was taken to a surgeon, who did a biopsy on one of these lesions, and the microscopic report was that it was tuberculous. *The X-ray report* of the chest at that time was "Both lungs, from top to bottom, are studded with innumerable tubercles. These are more or less uniformly distributed. Diagnosis miliary tuberculosis." *The physical examination* revealed nothing of importance except a little poor breathing over the upper lobes of both lungs. *Laboratory tests:* Sputum examinations were negative all the way through in this case, but the specimens obtained have been poor. They contained nothing, from what we could determine, but saliva. Blood and stool examinations were normal, but the urine showed, in addition to blood and pus cells, acid fast bacilli. The abdominal examination revealed an enlarged liver, a palpable spleen and some generalized tenderness in the lower abdomen.

Case No. 4.—Miliary tuberculosis. Note the myriads of tubercles throughout both lungs and the uniform distribution of them.

Remarks: It should be remembered that in a case of miliary tuberculosis, especially which is blood and lymph-borne, the tubercles are interalveolar in location at first and that usually no rales can be heard or bacilli found in the sputum until they rupture through into the air passages and produce exudation of the alveoli and small bronchi. This condition accounts for the absence of moisture and the negative sputum but, in this case, the X-ray was positive and revealed the only definite means of an accurate diagnosis. This case has not only pulmonary miliary tuberculosis, but generalized miliary as well. The acid fast bacilli in the urine indicated a lesion somewhere in the genito-urinary tract, and the enlarged liver and spleen would point to lesions in these organs.

Case 5: F. A. H.; age 42; occupation, painter. Admitted to the Sanatorium June 12, 1925. *Family history:* One brother died from tuberculosis in 1918. *Past history:* Six attacks of influenza between 1918 and 1925. Had pleurisy in 1905. *Present illness:* Patient had recently quit painting and gone to work for the railroad company, and this had subjected him to excessive irritating dusts by cleaning the inside



Case No. 5.—Calcified miliary tuberculosis. Was first diagnosed siderosis due to general appearance on the films and the occupation of the patient.

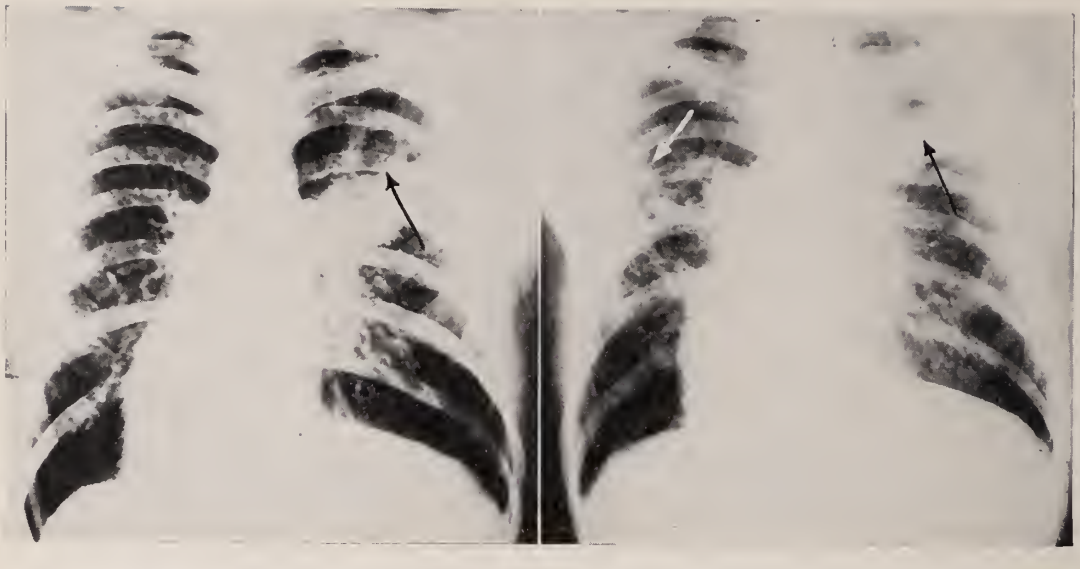
of water-tanks after they had been drained of the water and allowed to dry. His duty was to thoroughly clean these tanks on the inside and then paint them. Soon after beginning this work, he developed a cough which was made worse by the excessive dust to which he was subjected at this new work. This was followed by fatigue, shortness of breath, loss of weight and strength. *Laboratory tests:* Sputum was repeatedly negative for tubercle bacilli *Physical examination* was normal, except for some harsh breathing and increased voice conduction in the root regions of both lungs. No rales could be heard. *X-ray examination* was as follows: "Both lungs show, uniformly distributed throughout, sharply defined, discrete, minute, dense, shotlike areas which are more numerous in the bases. This condition is believed to be siderosis."

Remarks: This case is very interesting from the X-ray standpoint. We were too eager and anxious to make a diagnosis of siderosis, without thoroughly studying the patient's history. After seeing the X-ray pictures, which contained these numerous dense shotlike areas, and knowing that the man had been subjected to the inhalation of excessive dust from iron rust, we assumed that we were dealing with a case of siderosis and sent these films to Dr. Kennan Dunham, of Cincinnati. He frankly informed us that this was a case of calcified miliary tuberculosis and stated that it was the third that he had seen, and if we would go further into the history we would probably get information that would confirm his diagnosis. The patient was anxious to get compensation from the railroad and denied, for some time, that he had had anything but pleurisy in 1905, but finally admitted that his case had been diagnosed as tuberculosis at the University of Pennsylvania, while he was working on a street car in Philadelphia. Again, it was the X-ray films that enabled a true diagnosis of tuberculosis to be made. The physical examination and sputum tests were of no definite value. The history, of course, produced corroborative evidence when the true facts were once brought out.

Case 6: S. C. E ; age 25; occupation, farmer and hotel worker. Admitted to Sanatorium February 28, 1930. *Family history* negative insofar as known exposure to tuberculosis was concerned. One uncle died from tuberculosis during the patient's childhood but there had been no contact. *Present illness:* In June, 1929, he developed pain in the right chest. Following this he developed cough and expectoration, loss of weight, loss of strength and an afternoon fever. On consulting his family physician he was sent to the roentgenologist for films of the chest and the diagnosis was lung abscess, with cavity formation in the upper lobe of the right lung. The patient was then referred to the Chevalier Jackson Clinic in Philadelphia, where numerous bronchoscopic examinations were made. Following one of these the sputum was found to contain tubercle bacilli. He was then sent back home, with a diagnosis of tuberculosis, and his family physician sent him to Blue Ridge Sanatorium. At the time of admission he was found to have signs of extensive tuberculosis throughout the greater part of the right lung, with cavity formation in the apex, and infiltration in the upper lobe of the left lung. *X-ray examination* confirmed physical signs and the sputum examination was repeatedly positive for tubercle bacilli. Patient showed no definite improvement and died from a spontaneous pneumothorax of the right lung in October, 1930, eight months following admission.

Remarks: The photographs of the X-ray films here included show the condition of the chest when the diagnosis of lung abscess was made, and the second picture is after he had had numerous bronchoscopic treatments and had been sent to the Sanatorium for treatment In the case of the first films, there is a definite parenchymatous lesion, located in the apex of the lung, which had gone to the point of cavity formation. A lung abscess occasionally occurs in this region of the lung, but is far more common in the lower part. Frequent use of the bronchoscope may have been responsible for the extension of the disease in the opposite lung.

Case 7: G. M.; age 28; occupation, sales manager. Admitted to Sanatorium May 25, 1931. *Family history:* No history of exposure to tuberculosis, either in the family or otherwise. *Past history:* Nothing of importance except he had persistent sinus trouble during childhood. *Present illness:* Patient noted, in the latter half of 1930, that he was losing some



Case No. 6-A.—Films taken when the diagnosis of lung abscess was made and before any bronchoscopic treatments were given. Note consolidation and softening in right upper lobe.

Case No. 6-B.—Films taken after several bronchoscopic treatments and after tubercle bacilli had been found in the sputum. There has been a marked extension of the disease in the right upper, with a large thick-walled cavity now present. Also, a lesion, with consolidation and cavity formation, has developed in the third interspace on the left.

weight and became unduly tired on exertion; also, that a slight cough had developed. Cough gradually increased until in March, 1931, he consulted an eye, ear, nose and throat specialist, who, on examination of the larynx, found a small mass on the epiglottis and attributed the cough to this. He removed this from the epiglottis and in about two or three days the patient had two fair sized hemorrhages. Lung abscess was thought of as the probable cause and patient was sent to a roentgenologist for films of the chest. As may be seen from the photograph of the chest film here included, there was a consolidated area just off the root zone in the right lung which was diagnosed as an abscess. He was sent to the Jackson Clinic, in Philadelphia, where he had fifteen bronchoscopic treatments before the sputum was found to contain tubercle bacilli. At the time of admission to this Sanatorium he had a definite extension of the lesion in the right lung, as can be seen from the photograph of the second films. There was greater involvement of the lung space and an area of softening had taken place incident to cavity formation. *Physical signs* revealed an extensive involvement of the right lung from the clavicle to the base. *The X-ray interpretation* at that time was as follows: "There is an extensive tuberculous process occupying that part of the lung field below the clavicle, with consolidation and beginning cavity formation in the region of the second and third ribs. The left lung is about normal." Sputum examinations repeatedly showed the presence of tubercle bacilli. At the time of admission the patient was running fever of 103° and had marked anorexia. Pneumothorax was immediately started and at present the right lung is in a good state of collapse. The patient is rapidly improving.

Remarks: In the case of frank hemorrhages, like this patient had, the first consideration should be given to tuberculosis as the probable cause. A lung abscess may cause a hemorrhage but it is certainly not as common a cause as tuberculosis. The X-ray lesion was parenchymatous in character but its location was a little atypical for tuberculosis. In this case and in Case 6, the bronchoscope did not help the patient any.

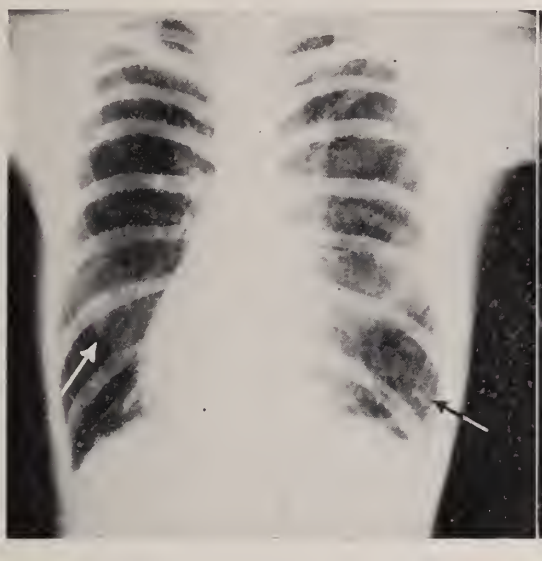
Case 8: Mrs. E. B. G ; age 26; occupation, housewife. Admitted to Sanatorium September 16, 1930. *Family history:* No known exposure to or contact with tuberculosis. *Present illness:* In June, 1930, patient developed pleurisy in the right side, which was followed by hoarseness, cough and expectoration, and fever of 101. Pleurisy subsided but the other symptoms continued, until in August the family physician became suspicious of the case and made application for the patient to be admitted to this Sanatorium for observation. At the time of admission, September 16, 1930, *physical examination* revealed nothing except harsh breathing and increased voice conduction in the root region of the right lung and extending downward into the base. Definite medium bubbling rales were heard after cough over this area, both in front and behind. The upper lobes of the lungs seemed to be normal, so far as *physical signs* were concerned. *X-ray report* at that time was as follows: "Right lung: In the root region and lower lobe there is an exudative process which has gone to the point of consolidation, with slight cavity formation. This is believed to be either tuberculosis or a lung abscess, with a preference for the latter." Repeated sputum examinations finally revealed the presence of tubercle bacilli. The case was then diagnosed as tuberculosis and pneumothorax treatment instituted. No difficulty was experienced in collapsing the lung.

Remarks: A lesion located in the root and base of the lung, as this one was, is more apt to be some other infection rather than tuberculosis, but persistent sputum examinations revealed acid fast bacilli and this was practically the only means of making an accurate diagnosis.

Case 9: Mrs. W. C. N.; age 39; housewife. Admitted to Sanatorium July 17, 1929. *Family history:* Negative so far as any known exposure to tuberculosis was concerned. *Past history:* The most essential factors in this are that patient was subject to

frequent "colds" and attacks of influenza and treated often for bronchitis and sinusitis. *Present illness:* The "sinus" and "bronchial trouble" gradually increased until in January, 1929, she expectorated a small amount of blood, and following this she developed a pain in the left side. She later noticed fatigue on exertion and loss of weight and strength. The family physician diagnosed her case as tuberculosis and sent her to the Sanatorium. At the time of admisson she had, on the *physical examination*, numerous musical rales over the lower two-thirds of both lungs, being more marked in the left. *The X-ray* (no photograph of films here included), revealed a chronic inflammatory process in the lower lobes of the lungs, with a definite tendency to "ringlet" formation in the left. A pansinusitis was found by our consulting specialist on an examnation of her nose. *The laboratory tests* were negative, including the examination of numerous specimens of sputum for tubercle bacilli. This case was suspected of having bronchiectasis and an intratracheal injection of lipiodol was done. The films taken following this showed definite clubbing of the bronchial tree in both lower lobes, especially the left, which confirmed the diagnosis of bronchiectasis.

Remarks: Considering the symptoms which the patient had, the case could easily have been diagnosed tuberculosis, but the other factors, namely, physical signs and X-ray, pointed to a chronic inflammatory process of some other nature involving the bases of the lungs. When repeated sputum examinations had been negative and we had, with a fair degree of accuracy, elimited tuberculosis, we felt justified in injecting the lipiodol, which proved the true means of establishing a diagnosis.



Case No. 9-A.—Bronchiectasis. The upper lobes are about normal but in the bases there is a chronic inflammatory process with "ringlets" in the right.

Case No. 9-B.—After intratracheal injection of lipiodol. There is moderate "clubbing" of the terminal bronchi, especially on the right, which represents the bronchiectatic areas.

CASE 10: J. D. S.; age 46; occupation, baker. Admitted to Sanatorium May 22, 1930. *Family history:* Father died from tuberculosis at age of 42. *Past history:* Nothing of importance except a history of having been treated for sinusitis during his young adult period and having had pneumonia in 1923. *Present illness:* Since the pneumonic attack in 1923, the patient had been subject to "colds" and "bronchial infection." In March, 1930, he noted some fatigue on exertion and began to run a low-grade fever. His physician diagnosed his case as tuberculosis and sent him to the Sanatorium. *Physical signs* at the time of admission revealed nothing in the chest except numerous musical rales in the right lung, extending from the second rib to the base, both in front and behind. *The X-ray films* of the chest taken at that time revealed nothing of importance and, from this standpoint, the chest was believed to be within the limits of normal. Patient had a little frothy mucous expectoration which was repeatedly examined but no tubercle bacilli could be found. The "bronchial" symptoms continued, until a few weeks after admission he was sent to Dr. Fletcher D. Woodward, of Charlottesville, for an examination of the sinuses and throat. Dr. Woodward found nothing of importance but suggested a bronchoscopic examination. This was made and he found, in the main stem of the right bronchus, a pedunculated tumor, which almost filled the passage. A biopsy was done and a microscopic examination of this revealed carcinoma. He was sent to Jackson's Clinic in Philadelphia in July, 1930, where this diagnosis was confirmed and radium therapy given.

Remarks: Symptomatically, this patient could easily have been considered as having tuberculosis, but the physical examination, X-ray and sputum examination did not corroborate it. There was no possible way to establish a diagnosis at this stage of his case without a bronchoscopic examination and we believe that where tuberculosis can be excluded in obscure cases of this type, the bronchoscope is an invaluable diagnostic aid.

CASE 11: J. C. L.; age 55; occupation given as farmer. Was admitted to Sanatorium December 5, 1930. *Family history:* No known exposure to tuberculosis. *Past history:* Fifteen years ago, patient had pneumonia while working in the mines and following this was told he had "weak lungs" and advised to change his occupation. *Present illness:* Since he stopped work in the mines he has not been entirely well and has been subject to frequent attacks

of "colds" which were inclined to last for a long time and were followed by cough and shortness of breath. In November, 1930, he developed a deep "cold" and on consulting his family physician he referred him to a diagnostician, who made a diagnosis of pulmonary tuberculosis and recommended

Case No. 11.—Silicosis Note the distribution—heavy fibrosis extending off from the root zones to the periphery, more marked in the right, with the apices and bases clear. "Bat-wing" appearance.

sanatorium treatment. At the time of admission patient showed poor breathing over the entire lungs, being most marked over the lower lobes. Numerous rales were heard over the lower two-thirds of both lungs, in front and behind. These rales were mostly of the musical type, although some fine mucous rales were present. *Laboratory findings* were of no significance except repeated specimens of sputum were negative for tubercle bacilli, both the concentration and direct methods being used. Summary of *X-ray findings* is as follows: "Occupying the central two-thirds of the right lung and about the middle third of the left lung is seen an inflammatory process of some character. This sweeps over from the root zone and goes into the lung field in a typical 'bat-wing' appearance. Tuberculosis can not be excluded, but these findings look more like silicosis than anything else."

Remarks: One of the most significant points in this case is the history. This patient told his family physician and the consultant before coming to the Sanatorium that his occupation was farming, and when he came to us he said nothing at all about having worked in the mines and having been advised to quit that work, due to the condition of his lungs. After seeing his X-ray films and making a tentative diagnosis of silicosis, we questioned him closely and he recalled the above facts, stating that during his fourteen and one-half years in the soapstone and graphite mines he ran a grinding machine which subjected him constantly to the inhalation of much dust. We could not get enough evidence in this case to say that there was any coexisting tuberculosis present. The important points in diagnosis in these cases are repeatedly negative sputum for tubercle bacilli; occupation, that is, history of having worked in the mines; and appearance of the condition on the X-ray films.

Case 12: D. L. W.; age 58, farmer. Admitted to Sanatorium May 4, 1931. *Family history:* One brother has asthma; one sister died from diabetes. No known contact with tuberculosis, either in the family or otherwise. *Present illness:* In January, 1930, patient began to cough and have some expectoration. This was followed by loss of weight and some slight fatigue on exertion. He consulted his family physician, who thought he had tuberculosis and made application for his admission to the Sanatorium. On admission, the *physical signs* revealed harsh breathing and increased voice conduction over the upper lobes of both lungs, and numerous moist rales were heard after cough from top to bottom of both lungs, being a little more numerous in the root regions. *X-ray conclusions* were as follows: "Scattered areas of infiltration throughout both lungs, which reach the point of light mottling in the lower lobes. Some small calcified nodes are scattered throughout the lung field. This disease is not typical of tuberculosis and probably represents some other type of infection." Sputum examinations were repeatedly negative for tubercle bacilli. Some abnormal growths, which were thought to be fungus, were noted on all the slides. The sputum was cultured and this fungus was found to grow prolifically on Sabouraud's media Dr. Frederick Shaw, of the Medical College of Virginia, was consulted, and he very kindly consented to identify the fungus. He found it to be a monilia, and a diagnosis of bronchomoniliasis was made.

Remarks: The physical signs in this case suggested tuberculosis, but the X-ray revealed an infection atypical of that. Due to this fact, a more thorough search of the sputum was made and this showed granular yeast-like bodies and an absence of tubercle bacilli. On either Sabouraud's media or dextrose agar, this organism grew freely, producing mycelia and budding. The diagnosis of bronchomoniliasis must be made in the laboratory.

Conclusions.

1. The subject is discussed in two parts: first, the various factors to be considered in making a diagnosis of tuberculosis in the average uncomplicated case; second, the consideration and exclusion of other conditions most commonly confused with tuberculosis in diagnosis.

2. Under the first heading the importance of applying the "diagnostic yardstick" is emphasized. A thorough analysis is advocated and correlation of all seven factors, namely, History, Symptoms, Physical Signs, X-ray Evidence, Tuberculin Test, Laboratory Findings, and Exclusion of Other Causes, is advised before a final conclusion is reached.

3. The minimum requirements for making a diagnosis of tuberculosis are as follows:

(a) The finding of tubercle bacilli in the sputum is, with rare exceptions, in itself diagnostic.

(b) Definite and persistent medium bubbling or mucous rales, heard with cough, or during the first part of inspiration following cough, in that part of the lung field located

above the second rib in front or the body of the fourth dorsal vertebra behind.

(c) Demonstration on X-ray films of a definite parenchymatous lesion located above the second rib in front or the body of the fourth dorsal vertebra behind.

(d) Pleurisy with effusion, or hemoptysis not otherwise explained, justifies a provisional diagnosis and a careful study over a period of months or even years, for further evidence of the disease.

4. In the exclusion of other causes in the diagnosis of atypical cases of tuberculosis, several diseases must be considered. The most common are briefly discussed, with a few points given in differential diagnosis. They are as follows: Lung abscess, bronchiectasis, lung tumors, fungus infection, pneumonoconiosis, nasal sinusitis, carious teeth and diseased gums, Malta fever, tularemia, toxic goitre and endocarditis.

5. A few cases which illustrate common errors in diagnosis are included, with a brief summary of the histories and remarks on the importance of applying all the available diagnostic aids if mistakes are to be avoided.

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HEALTH WORK IN THE NORFOLK PUBLIC SCHOOLS.*

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When I began to make an intensive study of the health work as done in the schools I was impressed from the outset by the enormous number of major defects found among the pupils that would, if uncorrected, have a very disastrous bearing upon the educational career of the pupils. These defects were noted not alone among the very poor, but often in children from the very best families. You can readily understand why the children of the poor might reach the school age without having had any kind of corrective work done, but it is not so easy to understand why children of intelligent, well-to-do families can reach school age and still be mouth breathers,—with conspicuously enlarged adenoids and tonsils; have many defective teeth untouched by a dentist, be badly under-nourished, with slouching posture, and never having been vaccinated against small-pox, or inocculated against typhoid fever, and never having had the protective treatment of toxin-antitoxin.

These are some of the things I desire to bring before you tonight and get your ideas as to what can be done to get the major part of the corrective and preventive work done before the child reaches school age. There is no reason why a child should have his school work constantly interrupted by having to make repeated visits to the dentist; having a sore arm from inoculations and vaccinations, or having to go to a hospital to have his adenoids and tonsils removed, and be incapacitated for school at least a week or ten days, when this work might very readily, in the majority of cases, have been attended to before he reaches school age.

As you know, the great majority of families

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have some physician they claim as their family physician, and these are the men I want to appeal to, because those who employ the services of pediatricians have, as a rule, had this preliminary work done. It would not be just or fair to state that the family physician is negligent of his duty; it would be more charitable and more in keeping with fact to simply say that he has been indifferent, or perhaps kindly indifferent—as he did not want to put these people to too much expense, or what the people might consider an unnecessary expense—simply pursuing the course of least resistance, forgetting the welfare of the child.

Our health work in the public schools, broadly speaking, has for its object to keep the child in school the greatest number of hours of his allotted school time, and under the best conditions possible for health, growth, development and study. There is almost a universal clamor for greater attention to the pre-school child, and when you get the public aroused, it is going to be demanded that this work be done, and if it is not done by the private physician, family physician or specialist, it is going to be done by some other agency whether we wish it or not. There has been much unfavorable criticism about so-called State medicine, but if such a thing ever comes to pass, it will be the physician's own fault. Children are human beings and they are entitled to a fair chance, if nothing more; they are entitled to reap the benefits of what can be done for them in the way of preventive and corrective measures. Domestic animals of every kind are getting as much. As yet, the pre-school child is not getting a fair chance, or else there would not have been 5,000 deaths from diphtheria in the United States during 1928 among children from one to six years of age. Diphtheria is a disease absolutely preventable, and if every pre-school child could only have toxin-antitoxin or toxoid, and then six months later be checked up by the Schick test to see if he is immune, and the treatment repeated if necessary, we could absolutely eliminate diphtheria from the public schools within a comparatively few years. Toxin-antitoxin is effective (that is, confers immunity) in about 90 per cent of the cases, but we should not be contented with being 90 per cent perfect; the life of one child of the 10 per cent groups is equally as important as the life of any one of the 90 per cent group.

You have heard it remarked that the general practitioner was not getting a square deal; that the better part of the work he formerly lived upon is rapidly being taken away from him, and that there is less and less for him to do. This is a very narrow and short-sighted view to take of the situation. All of us since we first entered medicine have been striving to prevent disease, and now we are beginning to see the fruits of our work. If every physician did his part in preventive work, he would receive greater pecuniary remuneration than if he only attempted to treat disease. For example, suppose any one of you had 100 children under your care, and you inoculated each against diphtheria at the minimum price of, say $6.00 for three inoculations of toxin-antitoxin, or two of toxoid, this would be $600.00. Then suppose no preventive work at all was done, you would hardly have more than four or five cases of diphtheria developing among this 100 children, and at the very most you would scarcely be required to give each one of these cases more than half a dozen visits, which would not amount to more than $25.00 for each of the six patients, which for comparison would be approximately $150.00 against $600.00 if you did the preventive work instead of the curative work. A similar comparison could be made in regard to typhoid fever.

Now let us consider briefly the pre-school clinic; no actual treating at all should be done—it should be simply educational. Cases should be referred to their private physicians for preventive and corrective work, and if unable to employ a physician they should be referred to one of the various clinics. In one city I recently visited, as a concrete illustration, out of 32 children in one pre-school group referred by this educational clinic to the family physician for a thorough examination, 28 reported later that they had been to their private physician for this necessary work. Without this clinic scarcely half a dozen would have had this work done. The physician's work should actually be increased by such a clinic, and, personally, I feel that if he would only view it in its true light, he would be more than willing to lend a helping hand.

Referring again to the actual medical work done in our schools, we try to adhere very strictly to the rule not to do any treating of any kind (except the most trivial, and to render first aid in accidents and emergencies)

but refer cases to their family physician, or to a clinic for treatment. However, I think there is one class of cases that should be treated from the schools, and that is scabies, ringworm, impetigo and pediculosis among the very poor. These cases have to be excluded from school for the protection of others, and, unless they are promptly and properly treated, they often have to remain from school for weeks or months, whereas, if they could be properly treated, they should be able to return to school after a few days. Many of this class of parents are glad of an excuse to keep their children from school, and pay no attention whatever to treatment. This is where a public health nurse could be able to do most effective work, and such a nurse should be provided, for the school nurses have all they can now attend to.

Vaccination and inoculation are strictly a public health measure and are not done by the schools, but by the health department. As you know, pupils have to be excluded from school unless they have been properly vaccinated, and often, in order to keep children in school, our inspectors vaccinate a few cases who are unable to employ a physician, and haven't the money for car or bus fare to go down to the office of the health department and have this work done. It would be a progressive step if the health department could arrange to send to the schools in the outlying districts of the city to do this vaccination at the first of each school term, and not impose this work upon the schools.

I have had many inquiries as well as criticisms from a number of interested physicians and patrons of the various schools in regard to school luncheons served in the lunch rooms. The lunch rooms are not under the supervision of schools except in the High School and one or two of the primary schools. In most of the schools the lunch rooms are under the supervision of the Home and School Leagues. These women are, as a rule, a very earnest, capable and enthusiastic group, and want to supply only what is best for their children. However, I think in some schools there could be some very helpful changes made in some of the menus. As yet I have been able to act only in an advisory capacity, but I hope to be able to give constructive suggestions later to help eliminate some of the undesirable practices in some of the lunch rooms. It is very difficult to make a child eat properly at school if he is allowed to eat as he pleases at home. There is no other place in which a child reflects his home training more strikingly than in the lunch room.

Every child should have his eyes examined before he is ready to enter school. It is done as a routine in the schools, but, of course, our examination is very superficial, and we can pick up only the worst cases, but even at that it helps toward the proper seating of the children in class until we can have a more thorough examination of the eye made, and glasses properly fitted. The hearing is checked up by the audiometer, and the work in this line is most satisfactory, enabling pupils with defective hearing to be placed towards the front and close to the teacher.

In closing I should like to ask for a free and frank discussion of the best means of finding and correcting major defects in the pre-school child, and I should like further to have constructive criticism of anything as set forth in my brief outline of health work as done in our public schools.

AN UNUSUAL CASE OF PERITONITIS.*

W. LOWNDES PEPLE, M. D., Richmond, Va.

Mr. P. C. P., Jr., age sixteen, was admitted to St. Luke's Hospital on February 22, 1931.

His past history was negative as he had been an unusually healthy boy. On February 8th he had an attack of what appeared to be influenza. It began with generalized pain and aching all over the body. There were no chills and apparently no fever, though his temperature was not taken at the time. His appetite seemed not to be affected at all as he ate heartily. He remained in bed for about three days and took the usual remedies which are given for influenza. He then got up and after going about the house for a few days resumed his ordinary duties about the farm. After an interval of about two or three days he became acutely ill again, with a severe pain all over the abdomen. There was nausea and persistent vomiting and he lost his appetite for the first time. He had also a persistent diarrhea with frequent yellow watery stools. They were mucoid in nature and very offensive in odor. This lasted for about three days. The bowels would check up considerably with

*Read before the Northern Neck Medical Society, at Heathsville, Va., May 28, 1931.

the administration of morphine. His temperature at this time was recorded twice daily and remained around 102°. In a few days all the symptoms abated and the temperature become normal and stayed so for about three days. At the end of this time the abdominal pain returned and was extremely severe. The nausea came back and his appetite remained very poor.

On February 19th, three days before admission to the hospital, his temperature was 102°, and the pain was particularly severe and seemed colicky in nature. The nausea continued and there was marked lassitude and occasional spells of delirium. The family physician who had been in almost constant attendance noted now that there seemed to be free fluid in the abdomen. It was then decided to bring the patient to St. Luke's Hospital where he was admitted on February 22nd.

His temperature on admission was 99° and his pulse about 85. The temperature rose that night to 103° and his pulse to 120. His urine showed a distinct trace of albumen with an occasional hyaline and finely granular cast, but was otherwise negative. He had 15,600 leucocytes with 79 per cent polymorphonuclears, 20 per cent lymphocytes, and one large mononuclear cell. There were 3,570,000 red cells with 57 per cent hemoglobin. By the next day, February 23rd, his white cells had risen to 23,200 with 90 per cent polymorphonuclears. There were no malarial organisms present and the Wassermann was negative.

The boy continued very ill with irregular temperature running from 99° to 103° and with rather frequent chills and heavy sweats His abdomen was constantly distended and appeared to be filled with fluid. The right chest showed dullness over the lower lobe so an X-ray was taken with the following findings: "Bony thorax appears normal. Diaphragm on the right side is entirely obscured at its upper surface, the lower lobe of the right lung being densely consolidated. There are some deposits along the bronchial branches on the right side and a few tubercles not yet calcified are seen in the apex and outward from the hilum. The left lung shows a slight mottling along the ascending bronchial branches. Appearances indicate that the patient has pneumonia at the base of the right lung. There is also some tuberculous involvement of both upper lobes."

He was kept under close observation, and his symptoms gradually subsided until his evening temperature was around 100°. The distention in his abdomen had now become so great that it was thought advisable to relieve it as it was embarrassing his respiration. We had been unable to arrive at a diagnosis but in spite of high poly count in his blood and the negative X-ray findings for active tuberculosis in his chest I was inclined to think we were dealing with a case of acute tubercular peritonitis. For this reason I felt it safer to make an incision than to attempt to use the trochar to remove the fluid from his peritoneal cavity.

On February 27th, five days after admission, a lower right rectus incision was made under spinal anesthesia, and about a gallon of cloudy yellowish ascitic fluid was withdrawn. There was a large quantity of coagulated lymph, looking like masses of jelly, throughout the abdomen. This was bailed out as far as possible with the hand. The abdomen presented a peculiar appearance. From the margin of the liver and the top of the spleen down into the pelvis there was a smooth covering uniformly sealing off all of the abdominal viscera. It was as though a curtain had been drawn from the liver margin down into the pelvis completely covering every abdominal organ. The hand could be passed between the liver and the chest wall and between the spleen and chest wall though there was a great deal of coagulated lymph in these areas.

The parietal peritoneum was thickened but there were no visible tubercles and no palpable tubercles anywhere. Looking down upon the covering to the intestinal contents it looked as though the omentum had been covered over with a new peritoneal coating. For fear of making a fistula this was not disturbed.

I could reach no other conclusion than that I was dealing with a case of tubercular peritonitis. Fluid was obtained for examination and guinea pig injection. Several sections from the parietal peritoneum were obtained for examination, and the wound was closed without drainage.

Following this operation his temperature was quite erratic, running from 98° to as high as 104°. The fluid re-accumulated very rapidly and although the temperature had dropped to below 100° by March 7th, it was decided to make a second incision and institute drainage.

Accordingly this was done on March 7th under spinal anesthesia supplemented with local novocaine. Up to this time the *Streptococcus pyogenes* was the only organism found in the fluid. A low left rectus incision was made about two and one-half inches in length and more than a quart of thick purulent fluid was aspirated from the abdomen. A rubber tube drain was then put in and the wound closed around it.

From this time on his improvement was very steady in every way. The wound drained very profusely but all of his symptoms grew better. By March 18th, a little less than a month after admission, his temperature had reached a definite normal and stayed there until his discharge from the hospital. The drain was allowed to stay in for about two weeks and when removed the wound healed nicely. Cultures from the purulent fluid showed the *Streptococcus pyogenes*. The boy was rapidly taking on weight and gaining in strength and improving in every way. An X-ray picture taken April 1st showed the following: "The diaphragm has now returned to normal position. Both lung fields are entirely clear. There is a rather marked bilateral thickening of the structures of the hila and of all bronchial branches. While there is considerable thickening and furring of the ascending branches the signs hardly warrant the diagnosis of unhealed clinical tuberculosis at the present time." The pathologist reported that the tissue removed from the parietal peritoneum showed nothing but an acute inflammation. There was no evidence of tuberculosis. On April 20th, the guinea pig which had been inoculated with the pus from the peritoneum was killed. He showed no evidence of tuberculosis.

Our conclusion is that this was a blood borne infection simultaneously of the peritoneum and the right lung and pleural cavity with a pyogenic organism associated with an acute attack of influenza. The case is reported because of its very unusual course and its happy ending.

CARDINAL PRINCIPLES IN THE TREATMENT OF ASTHMA AND HAY FEVER.*

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There are a number of diseases that are grouped together because they are characterized by hyper-sensitiveness to some substance—not necessarily the same substance in all of the group of diseases or one particular substance in different individuals. However, the sensitiveness remains constant in the same individual. The group of diseases referred to include asthma, hay fever, urticaria, migraine, eczema, and possibly two or three others.

It is well to remember that the chief pathology in all of these conditions is edema, and it is mainly from this edema that the symptoms arise. It is not definitely known that this condition holds true in migraine, but it is supposed at any rate to be some irritation to the meninges of the brain.

In asthma and hay fever the pathology is mainly limited to the mucous membrane, except, of course, in long standing cases of asthma there may be changes in the bronchioles and of the alveolae with or without a super-imposed infection.

Here we have an abnormally sensitive tissue to certain protein elements. This sensitiveness is not in the blood but in the tissues themselves. Nor do antitoxins develop in the blood from injections of the offending material. For this reason no immunity can be produced, but, by the injections of gradually increasing doses of the proteins to which they are sensitive, the tolerance of the tissues can be raised in most cases to the point where the individual in ordinary walks of life can be made comfortable and symptom free.

In order to be successful in handling these cases we must have, first, a fair working knowledge of the cause and effect in these cases, and we must also know something of the chemistry of the offending material and its characteristics. It is also essential that we have a fair knowledge of botany, and particularly should we know something of the plants that produce these diseases, and it is essential to know their habits and flowering time.

Second, we must get a careful history in all cases. The time of the year of the onset, duration, etc., will usually give us some clue as to the cause. A careful family history is essential because these conditions are practically always hereditary.

Third, a complete and thorough physical examination should always be made.

Fourth, we must have a knowledge that the

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material we are using is properly made, properly standardized, sterile and fresh.

Fifth, there must be a willingness on the part of the physician to follow out minute details in both testing and treatment.

Sixth, complete records must be kept. Unless this is done we can never hope to secure successful results because, in the first place, the dose of whatever extract we are giving should be increased gradually and systematically and at regular intervals if the patient is to get the result he should expect. Where we are treating several cases at one time we cannot hope to remember the dose each time nor the things to which the patient is sensitive, nor the things to which he is not sensitive.

Seventh, unless we can have the intelligent and whole hearted cooperation of the patient we are surely doomed to failure, and this should always be impressed on the patient on the first examination.

In connection with the taking of a complete history, it is very well to remember that this group of diseases is hereditary. Where one parent is allergic approximately 35 per cent of the offspring will show some form of allergy by the tenth year. Where both parents are allergic 77 per cent of the offspring will develop allergic symptoms by the tenth year. This does not mean that the same disease is transmitted in direct line but one of the group; also, in very young children the condition is practically always due to food proteins and occasionally infection. After the fifth year it is more apt to be caused by inhalants, and when the disease begins after the fiftieth year it is practically always of bacterial origin.

Another thing worth bearing in mind is the fact that certain drugs can and do produce asthma, particularly aspirin, phenolphthalein, certain of the coal tar products and some of the barbital group.

Chocolate is a very frequent cause of angioneurotic, migraine, edema and occasionally asthma.

I shall not go into the technique in testing for a diagnosis further than to state that we use the intracutaneous method in preference to the scratch method, first, because it is much more exact for the reason that we use a known quantity of a definitely known strength. In the scratch method the amount absorbed is problematical and of an unknown quantity; hence, the reaction might show negative due to the lack of absorption, when, as a matter of fact, a positive reaction would have been obtained if a more exact method had been used. The material we use is the same as that used by Coca, also Cooke and Vander Veer, and is prepared under the supervision of the Cornell Medical School.

Given, then, a patient with the proper diagnosis, and here I refer particularly to those persons whose trouble is caused by inhalants or foods, we are confronted with the problem of treatment. Here, again, is where good judgment is needed in those cases where a number of reactions are shown. It may be that the person reacts to various substances to which he is rarely exposed. These can as a rule be disregarded in the treatment. Then the treatment resolves itself into preventive and curative. If the patient is sensitive to certain food proteins or pollens and these can be easily avoided, the treatment would naturally be to avoid these materials. For those things that cannot be avoided an active immunization is begun, using the next strength dilution above that which gives an active reaction. The initial dose is usually one-tenth cubic centimeter, given twice a week and increasing one-tenth cubic centimeter at each dose, unless too much reaction is shown, in which event the dose is reduced. This type of case can be treated very successfully if done carefully and over a sufficient length of time. Here success or failure is very often determined by the cooperation or the lack of cooperation given by the patient.

Asthma and hay fever can be produced by non-specific material in subjects that are already hypersensitive.

A very good example of this was presented by a boy of ten years who came to me this summer. He was suffering with a very severe attack of asthma which required adrenalin to give him temporary relief. His past history was comparatively negative except for the usual childhood diseases and a tendency to have frequent colds. He always lived in Philadelphia and never had an attack of asthma so far as his parents knew. However, his mother had noticed that he had at times difficult breathing which she attributed to an upset stomach that was relieved by a purgative. While visiting his grandmother in the country this summer he came in contact a great deal with a dog and chickens. After riding one day several miles on a dusty sand clay road he developed

a very severe attack of asthma and it was at this time that I saw him. He was tested out and found to be very sensitive to house dust, moderately sensitive to dog Epithelium, feathers, and slightly sensitive to egg white and coffee.

Here was a case in which all the factors were present to produce asthma but the attack was precipitated by road dust—a non-specific substance.

Another case of a different type was presented in an infant ten months old. This child was well grown and well nourished and normal in appearance with exception of eczema on its face and upper arms. As far as the child's mother knew the family history was negative except the child's father had had hay fever. Past history was negative. She had never nursed. She was first started on boiled milk and dextri-maltose which did not agree with her. After this she was put on lactogen and karo syrup and she has been on this ever since. About the first part of the past January she was put on tomato juice one day and orange juice the next. The latter part of January she began having an eruption on her face and arms, which was diagnosed as eczema. The past winter she was tested to several different things but the mother did not remember what was used. For the past two or three months she had been fed some eggs. She was tested to orange juice, milk, egg, cotton seed, wheat, and tomatoes. She was found very sensitive to orange and moderately sensitive to egg white. The use of orange juice was discontinued and the mother was advised against feeding the child eggs. She was given a bland ointment and in two weeks time her skin was entirely clear and free of eczema.

Another case was a married woman, age 29, with two normal children and in good health except for the fact that she had had hay fever almost continously for the past seven years. In the Spring of 1922 when she was teaching school she began sneezing after the children had brought a large bunch of flowering privet hedge into the schoolroom. This lasted for several days after which she was free from any trouble until the middle of the following August. At that time she began sneezing again and had what she thought was a bad cold which lasted through August and September. This subsided until the first of the following May since which time she has had hay fever continuously the year round but worse in the Spring and Fall. She had been treated before by two different men without any appreciable result. She was tested to about forty different proteins and gave some reaction to them all. She was found to be moderately sensitive to house dust and feathers and very sensitive to ragweed and timothy. She was advised to avoid all dust as far as possible and to avoid the use of feathers, also fowls and canary birds. The first part of January of this year treatment was begun with her using one-tenth cubic centimeter of a one to 20,000 solution of timothy extract. This was increased one-tenth cubic centimeter a dose and given three times a week until she was taking six-tenths of a one to 1,000 solution with a very slight reaction. This dose was kept up once a week until the middle of May. She went through the Spring with no symptoms of hay fever. About June 20th she was started on ragweed extract, using one-tenth cubic centimeter of a one to 10,000 solution. This was given three times a week, increasing one-tenth of a cubic centimeter at a dose until she took seven-tenths of a one to 1,000 solution. At this period she had a rather marked reaction. The dose was then dropped back to four-tenths and she was kept at this until about the first of September. She went through the ragweed season with very little sneezing and has had no sneezing since frost. Prior to that time she was having hay fever the year round.

The fourth case occurred in a woman, aged 50, who had always been healthy and robust. Has had two children, living and well, and no miscarriages. Her past history was essentially negative. Her mother had eczema off and on all her life. Her asthma first started at the age of ten years, and lasted off and on until she was grown. Her first child was born when she was thirty. She had been free from asthma for ten years, but at this time she had an attack which lasted two months, when it disappeared again for eight years. She has had it off and on since that time. At present she is inclined to have asthma the year round but usually it gets worse in June and lasts through September. She has always been made worse by tobacco smoke, and her asthma has always seemed to be worse on the right side of her chest. Her physical examination was negative except for her asthma and possibly a slight tenderness over her gall-bladder. At times she has a slight elevation of temperature.

She was tested out two years ago in St.

Louis and Memphis, and reacted to feathers, animal hair, and slightly to short ragweed. "At that time she had an X-ray made of her head which showed both frontal sinuses c'oudy, both ethmoids cloudy, both antra very cloudy, and both sphenoids were cloudy. On account of this an antrotomy was done and the ethmoids were exenterated."

I saw her this year in July with a severe attack of asthma. At this time she reacted very markedly to house dust, slightly to timothy, moderately to feathers, slightly to orris root, and negative to ragweed. Her sputum was loaded with a mixed infection. X-ray examination of her sinuses showed negative. Here was a case of long standing asthma with a super-imposed bacterial infection which did not respond well to treatment, and her asthma was confined mostly to her right side.

This last case brings to mind a rather interesting report given by Dr. Edward A. Looper, of Baltimore, in the October 31, 1931, issue of the *Journal A. M. A.* on the use of the bronchoscope. Here he reported some cases where he found a bronchus plugged with mucus which was removed by suction—to the relief of the patient. Another case was mentioned in which he removed a small growth from a bronchus with relief of the patient's asthma.

I am inclined to believe that more obscure cases of asthma, particularly where it is unilateral, could at least be benefited by a more extensive use of the bronchoscope.

Conclusions

This group of diseases can be treated very satisfactorily where the fundamentals of the conditions are understood and proper technique carried out.

These conditions are a great deal more prevalent than are generally recognized.

By proper handling a great deal of discomfort and suffering can be avoided, and loss of time from work can be prevented.

705 *Main Street.*

SOME THOUGHTS ON APPENDICITIS.

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While discussing a paper entitled "Has the Last Word Been Said about Appendicitis?" Dr. J. M. T. Finney made this statement: "The last word would not be said about appendicitis until we can count 100 per cent cures, with wounds healing by first intention."

We all realize that this goal, though so much desired and striven for, is certainly not yet within our grasp—for several reasons: viz., some cases of appendicitis proceed to gangrene or necrosis from the beginning of the attack. Again, there is still the belief, and this is borne out to an extent by experience, that many cases yield readily to medical treatment. Further, pathological changes taking place in the diseased appendix, or shadowed by the administration of opium and its preparations, mislead from a clear concept of conditions. Then an aversion still remains uppermost with some persons towards surgical operation, thus delaying proper treatment until the outcome is doubtful.

With our present operative technique, it is true to state that a patient with a diseased appendix is safer with it removed, and that early operation for acute appendicitis is associated with a mortality which is almost nil.

All cases of appendicitis are well on the road to recovery or else come to operation within four or five days after the beginning of the attack. One cannot rely upon the mouth temperature as an accurate guide to the pathological changes taking place, or to the extent or character of the progress of the disease.

In all abdominal conditions, temperature to be accurate and trustworthy should be taken in the rectum.

Rectal temperature of 101 F. or over, several days or more after the beginning of the attack, always means a gangreonus appendix, or a purulent process present, and hence are not surgically clean cases.

Cases Becoming Gangrenous Early

In this type, generally with the first attack, the pain comes on suddenly with vomiting, often during the night or early morning, and awakens the patient; pain is intense in the epigastric region, with frequent retching and vomiting; pain continues, and within ten or twelve hours the pain moves lower down in the abdomen, lessens, and tenderness can be made out over the appendix—obstructive appendicitis.

If the appendix is post-cecal, there may be no tenderness or rigidity over the abdomen anywhere, the tenderness being confined to the region of the loin posteriorly. Later within ten or twelve hours it can be elicited in the lower right quadrant.

If the appendix is in front of the cecum, ten-

derness and rigidity can be made out earlier in the lower right quadrant of the abdomen, and tenderness to pressure over McBurney's point is extreme. The temperature does not increase for twelve hours or so, and the rise is slow. Early the white cell count is high, often in the twenty thousands, with polymorphoneutrophiles markedly in excess—around 90 per cent or more.

Unless relieved by operation, this continues until the blood vessels become thrombosed, and definite gangrene is present, when frequently there is then a lull in the pain, as the necrotic coats of the appendix give away and relieve pressure. As this occurs, the temperature usually drops to normal point, or a little below, only to rise again as the septic material involves the surrounding structures, and peritonitis, diffuse or local, with pus formation sets in. The marked tenderness remains, even though rigidity lessens, and the exquisite tenderness to pressure is apparently out of all proportion to the temperature and general expression of the patient, whose pulse is quiet and he does not look very ill.

At times there is little or no rigidity. Pain is complained of and severe tenderness down towards the pubic attachment of Poupart's ligaments. This means that the gangrenous appendix is pointing downward and forward into the pelvis—pelvic appendix.

Pain in voiding urine signifies exudate in the pelvis, behind the bladder, and is generally purulent in type.

Red blood cells are frequently found in the urine in cases where the inflamed, diseased appendix is post-cecal, due to hyperemia. Gangrene of the appendix is due to obstruction, produced either by a stricture or kink, or to fecal concretions. Sometimes a large fecal concretion is found at the proximal entrance in the cavity of the appendix, completely obstructing it, and causing congestion, edema, thrombosis of vessels and death of the appendix. Again, the lumen may be filled with pus. As for medical treatment, many receive no treatment whatever.

The attack comes on with pain and vomiting. The individual, regarding it as acute indigestion, takes a purgative, and, with the release of pressure, congestion subsides, and the patient is over the attack in a day or two, suffering only a little soreness for a time. If treated medically, an attack is best handled by sitting patient upright in bed, placing ice-caps over lower abdomen, and giving no medicine whatever. Small amounts of cold water may be taken by mouth, when the attack, if amenable to relief in this manner, will quickly subside; otherwise, it is a case for operation.

Where there is pain in the abdomen with sudden rise of high temperature, one must look for the trouble elsewhere; and it will likely be found in the thoracic cavity.

Opium or its derivatives should never be given until the diagnosis is complete and decision has been reached as to the handling of the patient. By this we mean that, once arrangements are made for transportation of patient to hospital and operation, small doses of morphia may then be given hypodermically if patient is in much pain.

The ice-cap often is as potent in relieving the pain as is opium. It is an extremely unwise procedure to have a consultation whilst the patient is under the influence of opium.

Acute appendicitis begins with pain, the pain always preceding the nausea or vomiting.

I have never met with a case of appendicitis which began with chills—always pain first. Chills do occur in a small percentage of cases of appendicitis, and, when they do, it is significant of a septic factor, either gangrene, or a purulent appendix.

Pain of appendicitis is at first more or less generalized over the abdomen, centering around the umbilicus, and in a few hours, usually eight or ten hours, localizes in the right lower quadrant of the abdomen, and here the point of tenderness is found at "McBurney's point."

If one will draw a line from the umbilicus to the right anterior superior spine of the ileum, with another through the centre of this line, at a right angle to it, and come outwards 2.5 c.m. from the point where the two lines cross, this will give you McBurney's point. At the outer edge of the rectus muscle on the line drawn from the umbilicus to the anterior superior spine, we find Munro's point of tenderness in appendicitis.

If the appendix is post-cecal, and many of them are, the tenderness can be elicited posteriorly by pressure in the loin. This should always be remembered when examining a patient for appendicitis. If the appendix can empty itself, as it does in some acute cases, as in certain cases of appendiceal colic (where one usually sees a large, long, free, bluish-grey looking appendix containing dark black soft feces and a cecum of much the same color) or

as in attacks of cholangitis, relief is afforded until return of another attack. However, if the pathological factors continue active, congestion, engorgement, edema, and obstruction with presence of bacteria, whether due to a twist, stricture, or fecal mass in the appendix, the vessels become occluded, thrombosed, and necrosis and gangrene supervene.

A hard, rigid, retracted abdominal wall means extension peritonitis. There is one class of patients, inclined to stoutness as a rule, over 40 years of age, who have, associated with their appendicitis, distention and tympany of the intestines—a condition of paresis, likely the result of toxemia upon the nerve control in the bowels.

These appendices are generally gangrenous, or in a condition of acute suppuration. These patients as a rule show granular or hyaline casts, or both, in the urine. The abdomen remains distended after operation; they vomit, and there is some difficulty in getting the bowels opened. This can be overcome by lavage and medication through the stomach tube, or an ampoule of pituitrin can be given hypodermically every hour until five or six are given, or the bowels move, which they usually do with large movements and much gas expelled; however, in a short time the patient is distended as before, a condition of adynamic ileus. The abdomen is tense, distention remains, and these patients die from a condition of peritoneal sepsis. From our experience we feel that these cases should not be operated upon as emergency cases, but should be put to bed, placed in an upright position, stomach washed out, ice-caps kept over abdomen, and nothing given by mouth except small quantities of cold water, with rectal drip instillation of bicarbonate of soda and glucose. This treatment should be kept up until the patient's general condition improves. Fever, if any, will subside, and abdominal distention softens and quiets down—essentially the "Ochsner treatment."

We have handled such cases in the manner described, keeping them on this treatment as long as ten days or more, when we were able to open the abdomen, remove the diseased appendix, and have the patient recover.

Rigidity is in proportion to the irritation of the overlying peritoneum. Leucocytosis is in proportion to the tension the bacteria are under.

When possible a differential leucocyte count should always be made; the polymorphonuclear cells will predominate. The bacteria invading in appendicitis have been frequently worked out, and comprise mainly the pyogenic and colon group.

Fecal fistula as a result of diseased and necrotic bowel, if in the cecum, generally takes care of itself, heals and rarely calls for closure operation; fistulae in the small intestine require closure by suture.

The hard smooth bulbous extremity in the tip of a chronic irritated appendix is suggestive of adeno-carcinoma. The pain in appendicitis begins above and travels downwards; the pain in pelvic inflammatory disease begins below and travels upwards.

Pyelitis in pregnant women comes on with a chill, high temperature, pain in the side and about the loin, with tenderness over the affected kidney, and a history of some previous slight vesical disturbance. The urine upon examination will be found to contain pus cells, and at times blood cells. In these cases urine had best be collected by catheter, if necessary by direct catheterization of the kidney pelvis itself, when the urine will flow from ureteral catheter under tension and will be purulent.

110 *East North Avenue.*

ARTHRITIS.*

J. S. GAUL, M. D., Charlotte, N. C.

Arthritis is a general systemic disease with joint manifestations. This disease has assumed a leading role in the production of disability and economic loss.

It is important from the standpoint of successful treatment that a broad concept be had of the disease. It must be appreciated as having a background, at times in heredity, in altered physiologic processes and in faulty mechanics. Trauma and infection must be considered, mental and physical fatigue are important.

There are two large groups in the rheumatic patients: first, those with the atrophic or proliferative type, the rheumatoid type of the English, and, second, the hypertrophic or degenerative type or the osteo-arthritis of the English.

The atrophic type is usually found in young, thin, ptotic persons. The musculature and muscle tone is poor, the thoracic cage narrowed, the costo-phrenic angle acute, the

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Suffolk, Va., December 1-3, 1931.

diaphragmatic excursions are shallow, the abdominal viscera sag, the colon and cecum are dilated and "boggy," and the posture and weight bearing are poor.

The onset is usually acute. Patients fatigue easily, both mentally and physically, and have pain and fairly pronounced joint swellings from effusion. The involved joints atrophy from disuse, and do so quite rapidly. The X-ray reveals early changes in the bone, with increased density of the soft parts and diminished density or atrophy in the bone.

In the spine there is frequent involvement of the anterior spinous ligament, which on contracting produces the marked kyphotic deformities seen in this disease.

The pathological changes in the atrophic type appear in proliferative changes in the synovia and later atrophy of the cartilage. This is followed by severe atrophy, fibrosis, adhesions and ankylosis.

The hypertrophic type is found in those past middle life, and of the robust type. The onset is gradual. Pain is not so severe, but trauma precipitates attacks of pain. The spine or one or more joints are involved. Atrophy is not so marked, and the X-ray shows marked lipping. Rarefaction of bone and the soft tissues have about the normal density. There is but slight tendency to fusion of the joints.

In both types the physiologic processes are below normal. Patients usually eat a diet that induces constipation—that is, a low vitamine, high starch diet. The intestinal tract becomes sluggish and most of the patients are constipated. The circulatory apparatus is sluggish, the peripheral capillaries become contracted, the extremities are cold and clammy. There is poor nutrition in the various joints, passive edemata occur, and later trophic changes appear with fibrosis and subsequent contractures.

Patients in such poor physical condition are naturally subject to various infections. The question seriously arises—"Are foci of infection the cause or the result of rheumatism?" Rheumatics do have foci of infection which require proper attention. In this connection we feel the foci should receive attention after the patient has been completely surveyed, and a real concept of the whole, true condition of the patient is had.

We have seen these untreated foci disappear when the general condition of the patient has been considerably improved by general treatment. We have also seen patients made much worse by the precipitate removal of foci of infection when they were in no condition to withstand added insult. Again, we have seen patients who have improved in their general condition and then been further greatly benefited by removal of foci.

The question of treatment, then, of a condition or series of conditions called rheumatism, necessarily demands that the plan of attack be comprehensive. To treat all arthritis with one principal treatment, one drug, or one vaccine is doomed to failure in any except an insignificant percentage of cases.

The treatment of these cases naturally falls into the hands of the general practitioner and internist. They should recognize the disease in its incipiency and promote a program of prevention based on the broad lines such as that for tuberculosis. This regime will produce superior results to that for tuberculosis.

Rheumatism is a curable disease, and if properly treated is a source of great revenue to the doctor. The old chronic cases will be troublesome, but the incipient cases are easily managed, and can be directed in a proper mode of living.

The principal factors in the treatment are rest, both mental and physical; proper elimination; a balanced diet, high in vitamines and low in sugar and starch content; and physical therapy, including proper massage, heat, correction of posture, and careful daily motion to the affected joints. Deformity is to be prevented by any endocrine disturbances corrected.

There are selected cases which are benefited by vaccines, and others by protein shock therapy. Iodides, salicylates and thyroid extract may be administered where the indications are clear. It is to be emphasized these measures are in addition to the above regime.

The orthopedic surgeon is of assistance to the internist and general practitioner in preventing deformities, or in correcting them after they have occurred, relieving contractures of muscles and joint capsules. He may remove spurs where particularly troublesome, remove joint "mice," perform arthoplasties where desirable, and arthrodese particularly painful joints where but a few degrees of motion are retained. He is useful in controlling efforts directed toward correcting faulty posture and

faulty weight bearing, and in supervising other physical therapy procedures.

Surgery is never indicated in the active state of the disease. Joints of the atrophic type should never be encased in plaster, but should be protected by removable splints which will permit daily massage and passive movement.

Conclusions

1. Rheumatism is a general systemic disease.
2. It has a leading role in producing disability and economic loss.
3. An active campaign should be waged, educating the public regarding the prevention of rheumatism, and in proper mode of living when individuals are once affected.
4. Many factors are found influencing the disease.
5. Treatment to be rational must comprehend these factors, and the plan of attack be directed to the correction of physiologic and physical deficiencies: providing mental and physical rest, a properly balanced diet, high in vitamines, and low in starch content, and in proper elimination. In other words, we must treat the patient and not the disease.

Professional Building.

LEPTOTHRIX BUCCALIS INFECTION.*

T. LATANE DRISCOLL, M. D., Richmond, Va.

My reason for this paper, which is more in the nature of a case report, is the fact that I, with my colleagues had difficulty in diagnosis.

The leptothrix belong in the classification of higher bacteria. Kuetzing proposed the term leptothrix to include four species of this organism. Leptothrix buccalis has received some attention in medical literature, and was first observed in springs containing iron, and subsequently found on the teeth of horses. Fundamentally, this is a subject for the botanist, but in view of the fact that this same organism occurs in humans, we must perforce take cognizance of it.

The leptothrix buccalis with which we are concerned is a filamentous structure, clubbed at one end, and tapering on the other, about 0.8 micron in thickness, and 10 microns long, which stains yellow with iodine. There is apparently no branching.

These structures may infect the tear ducts, pharynx, and other contiguous structures. In the case to be reported the area of infection was the tongue.

H. D. Student. Age 28. American.

Chief complaint: Sore tongue.

Past history: Essentially irrelevant.

Present history: Six weeks before consulting the writer, patient observed a soreness on either side of the frenum of the tongue, and this had lately become so annoying as to seriously interfere with his studies.

Upon examination there is presented an eroded area around frenum which is somewhat reddened, and slightly edematous, distinctly tender on pressure, with a suggestion of induration. There is nothing characteristic in this condition with which I am acquainted, and slides made from lesion show what the author takes to be leptothrix buccalis.

Patient was put upon solution of one-tenth part oil of cinnamon, locally applied, with very prompt response.

Bibliography

Kuetzing: *Glasgow Medical Journal.* January, 1927.

Broad-Grace Arcade Building.

*Read by title at the sixty-second annual meeting of the Medical Society of Virginia, in Roanoke, October 6-8, 1931.

Woman's Auxiliary, to the Medical Society of Va.

President—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.

President-Elect—*Mrs. W. P. McDowell*, Larchmont, Norfolk.

Secretary—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.

Treasurer—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

A Message from the President.

To the Members of the Auxiliary:

Before you disperse for the summer, I wish to inform you that the annual meeting of the Medical Society of Virginia will be held in Richmond, November 1st, 2nd, and 3rd. The Woman's Auxiliary is always held in conjunction with this meeting, so plan to come with your husbands. The weeks fly so swiftly that November will be here before we know it.

I am writing this note to urge that our members bear the Auxiliary upon their minds and hearts during their summer travels, and whenever possible, talk to the doctors' wives in any city, town, or county in Virginia that you may try to interest them in forming an

Auxiliary. Please send names and addresses of any prospects to our Chairman of Organization, Mrs. M. N. King, 1314 Westover Avenue, Norfolk, Virginia, or to the President. They will gladly follow up your efforts with letters of information and visits, if desired.

Never in the history of Virginia has the need for the care of the health of the people at large been so great as today, due to the lack of employment. Many are not getting proper nourishment and this with mental worry reduces their vitality and makes them very susceptible to diseases of all kinds.

We believe the Auxiliary can give real service in cooperating with the Medical Society and health officers in their efforts to improve health conditions in the State at this critical time. Make a survey of local conditions and do your part to improve them. Especially do we call your attention to the homes of the poorer classes—see if they are clean and sanitary. One bad section is a menace to the health of the whole community, and for your own safety, as well as their comfort, clean up these plague spots before it is too late.

Card Party

We are happy to report quite a nice sum was realized from the card party that the Richmond Auxiliary gave recently. The chairman of the tickets, Mrs. Andrew G. Shetter, reported 140 tables engaged, which proves that all of the committees worked with zeal and enthusiasm. We were blessed with a gorgeous spring day, the trees and flowers were at their loveliest and the playing on the lawn at Linwood Hall was a real joy.

The money will be used to help furnish the two lounge rooms in the new Academy of Medicine Building, which is fast nearing completion. The remarkable and very valuable collection of old medical books and prints presented to the Richmond Academy by Dr. Joseph L. Miller, an alumnus of the Medical College of Virginia, will be housed in this building, also the executive offices of the Medical Society of Virginia, and because of this, it will be Headquarters for the doctors of the State. All of the Auxiliaries in Virginia are urged to make a contribution, no matter how small, and thus have a part in furnishing this Medical Home. We hope to have the building finished and furnished in time to welcome the convention this Fall.

New Auxiliary

I attended a meeting, the morning of June 16th, that was of great interest to me, and, believing that our members will be interested also, I will report it briefly. The Old Dominion Medical Society, composed of the negro doctors of the State, held their annual meeting in Richmond, June 14th to 16th and, to my surprise, it has a Woman's Auxiliary. Dr. Roberts, of Roanoke, recently wrote, asking me to give him some information about the work of our Auxiliary and later I was asked to speak at this meeting. I found an earnest group of intelligent women, doctor's wives, who, five years ago, in Portsmouth, organized a Woman's Auxiliary, with branches in Richmond, Norfolk, Petersburg, and Roanoke. These women are studying health conditions in their localities and are trying to improve them, also they are supporting a bed at the Burkeville Sanatorium. They are well organized and deeply interested and I believe they can render a real service in public health work for the negroes of our State.

Miss Smith, who is doing such fine work in the Child Health Bureau, went to the meeting, at my request, and gave them a most instructive talk on the Five-Point Child, pre-school examination, etc., also told them what the State was doing for maternal welfare by having a course of instruction in the various counties for the midwives. There are 4,000 midwives in Virginia, 3,000 of which are colored. Many of them are entirely untrained and illiterate. This probably accounts in a great measure for the high mortality in childhood. Miss Smith gave out health booklets, etc. One of the special works of the Auxiliary is for bettering the conditions of prospective mothers.

Virginia, I believe, is the first State to report a colored Auxiliary, and we are glad to extend them a helping hand. We offer this new organization our congratulations for work accomplished and our best wishes for their future usefulness.

If I can be of any service to you during the summer, call upon me.

Mary Gray Hodges,
President.

Truth About Medicine

In addition to the articles enumerated in our letter of April 29th the following have been accepted:
Abbott Laboratories.
Tincture Metaphen 1:200.
Eli Lilly & Co.
Solution Liver Extract No. 343..
Ampoules Solution Liver Extract No. 343, 10 c.c.
E. R. Squibb & Sons.
Ampules Iodobismitol, 2 c.c.
The following article has been exempted and included with the List of Exempted Medicinal Articles (New and Nonofficial Remedies, 1931, p. 477):
Lederle Laboratories, Inc.
Sterile 1-1000 Solution Epinephrine Hydrochloride.

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Diphtheria Shick Test Toxin, Diluted Ready for Administration—Gilliland.—A diphtheria toxin (New and Nonofficial Remedies, 1931, p. 383) made by growing diphtheria bacilli in broth, aging and diluting with peptone solution. The product is ready for use, without diluent. It is marketed in packages containing sufficient material for 10, 25 and 50 tests. Gilliland Laboratories, Inc., Marietta, Pa.

Diphtheria Toxoid—Gilliland.—A diphtheria toxoid (New and Nonofficial Remedies, 1931, p. 370) prepared from diphtheria toxin whose L+ dose is 0.20 c.c. or less by treatment with formaldehyde. The preparation is marketed in packages of one immunization treatment, in packages of ten immunization treatments, and in packages of fifteen immunization treatments. Gilliland Laboratories, Inc., Marietta, Pa.

Digalen Injectable—Roche.—Ampules containing 2.1 c.c. Each 2 c.c. represents 1 cat unit of digalen (New and Nonofficial Remedies, 1931, p. 136), in 8 per cent alcohol. Hoffman-LaRoche, Inc., Nutley, N. J.

Ampules Iodobismitol 2c.c.—Each 2 c.c. contains sodium iodobismuthite (Jour. A. M. A., February 13, 1932, p. 554), 0.12 Gm., sodium iodide 0.24 Gm., in ethylene glycol. E. R. Squibb & Sons, New York.

Solution Liver Extract No. 343.—A sterile aqueous solution of liver extract No. 343 preserved with 0.3 per cent of cresol. Each c.c. contains the active material derived from 5 Gm. of liver. The product is proposed for intramuscular injection in the treatment of pernicious anemia. It is supplied in 10 c.c. ampoules. Eli Lilly & Co., Indianapolis, Ind. (Jour. A. M. A., May 28, 1932, p. 1884.)

FOODS

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

Bromm's Kew Bee Bread (L. Bromm Baking Company, Inc., Richmond, Va.).—A white bread made by the sponge dough method. It is claimed to be a bread of good quality.

PROPAGANDA FOR REFORM

Montgomery, Ward & Company Withdraws Laboratory Service.—Following publication of the report of the A. M. A. Chemical Laboratory relative to its survey of the urine examining service conducted by Montgomery, Ward & Company many physicians wrote to the firm asking for an explanation of this project. In reply a letter by the president of Montgomery, Ward & Company has been sent to many physicians and stockholders in which it is stated that the urine analysis service has been discontinued. (Jour. A. M. A., May 21, 1932, p. 1813.)

Undulant Fever.—Several observers have reported favorable therapeutic results with specific Brucella melitensis (abortus) vaccine therapy. Two Brucella melitensis variety vaccines have been accepted for New and Nonofficial Remedies. (Jour. A. M. A., May 21, 1932, p. 1832.)

Boric Acid Harmful Internally.—Boric acid 1.3 Gm. (20 grains) taken internally for reducing purposes, would be decidedly harmful. (Jour. A. M. A., May 21, 1932, p. 1833.)

Glucosin.—The advertising circular for "Glucosin" is a typical example of pseudoscientific polyglandular therapeusis. The name of the promoter is not a familiar one to those in authority in the field of diabetes in America, and it is doubtful whether his Italian colleagues regard him as an authority. It should be evident that any one promising a "sure cure" of diabetes in six months must be a charlatan. (Jour. A. M. A., May 21, 1932, p. 1833.)

The International Treaty Controlling Narcotic Drugs.—On March 31st the United States Senate ratified the international treaty for limiting the manufacture of narcotic drugs. The treaty was the result of an international conference held at Geneva in 1931. The treaty should be far-reaching in its effect on preventing the smuggling of contraband drugs into this and other countries. The treaty does not weaken or relax existing American measures for the control of the legal use of these drugs, or those for the suppression of their abuses. The treaty deals with two phases: the limitation of the manufacture of narcotic drugs, and the strengthening of measures for their international control and distribution. (Jour. A. M. A., April 16, 1932, p. 1379.)

Book Announcements

A Speech for Every Occasion. New Speeches by A. C. EDGERTON, LL. M., Co-author of Thirty Complete Debates. Noble and Noble. New York City. Octavo of 436 xix pages. Cloth. Price, $6.00.

Transactions of the College of Physicians of Philadelphia. Third Series. Volume the Fifty-third. Philadelphia. Printed for the College. 1931. Octavo of 317 pages. Cloth.

Plastic Surgery of the Nose, Ear and Face. By DR. VICTOR FRUHWALD, Ex-Assistant of the Nose, Throat and Ear Clinic in Vienna. Translated by GEOFFREY MOREY, M. B., B. S. (Adalaide), D. L. O. (London). Junior Surgeon Shropshire Nose, Ear and Eye Hospital (Shrewsbury). Vienna. Wilhelm Maudrich. 1932. Octavo of 86 pages. With 88 Illustrations. Cloth. Price, $4.00 postfree.

The Expectant Mother's Handbook. By FREDERICK C. IRVING, A. B., M. D., Professor of Obstetrics, Harvard Medical School; Visiting Obstetrician, Boston Lying-in Hospital. Boston and New York. Houghton Mifflin Company. The Riverside Press, Cambridge. 1932. 12mo. of 203-xii pages. With illustrations. Cloth. Price, $1.75.

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Editorial

Dr. Charles Rollin Grandy.

As we prepare editorial comment for this issue of the MONTHLY, word comes with the sad news of the death of a former president of the Medical Society of Virginia, Dr. Charles Rollin Grandy. The distressing news of Dr. Grandy's sudden and untimely death will bring grief to the members of the Medical Society of this state. The high purposes and the enthusiastic efforts of his administration, when he served so signally as president of this Society, distinguished Dr. Grandy as a man of unusual gifts in organization and leadership. He gave freely of his time in advancing the best interests of organized medicine in this state. He travelled over the state and endeavored to forward the work of local and county medical societies. He made especial effort to increase the usefulness of post-graduate study of medicine in this state. He took a leading part in shaping the plans that have been in operation more and more successfully in this state, whereby the active practitioner in the field may have, by various clinics and lectures, clinical medicine brought to him in his local community. Dr. Grandy, as President of the Society, took an especial and effective interest in the balancing of the budget of the finances of the Society. He made striking efforts to give new life to the sessions and the programs of the annual meetings. In fact one may say that as President of the Medical Society of Virginia, his services were of a high order and the effects of his wise administration will be carried through the coming years. His fine, clean, high, frank personality, always found aligned in the cause of the best humanities, will be long remembered by his host of friends. His name will be long revered for his great service to the profession, to the cause of prevention of disease in his native state.

Pellagra.

A recent analysis of 102 cases of pellagra by Boggs and Padget,* as abstracted in the *American Journal of Medical Sciences*, June, 1932, page 862, offers conclusions of interest on this malady. Such a study based upon the observations of an author during the course of twenty years brings interesting facts to the reader, now and then, seeing a case. These writers arrange a classification of pellagra that is easy of recognition and is borne out by their years of experience with this malady. They define three types: (1) simple pellagra; (2) post-alcohol variety; and (3) pellagra engrafted as a complication of some other disease. In the simple pellagra type, there were thirty-one, in the alcohol group there were forty, and in the third group there were thirty-one cases. It was noted by the authors that pellagrous lesions were not characteristic of the seasonal symptoms of the Spring. Most of the patients complained of dermatitis, diarrhea, and sore mouth, but one-fifth gave no signs on admittance characteristic of pellagra.

These authors point with special interest to

*Bulletin John Hopkins Hospital, 1932, 50, 21.

cases with a history of excessive use of alcohol: of the forty cases of this group, thirty-six entered the hospital after a spree lasting from four to six weeks, and the four remaining had used for a long period a daily ration of distilled liquor. These cases showed dermatitis, stomatitis, and diarrhea. Forty-five per cent showed spinal cord lesions, and one-half showed some type of psychosis. Anemia was found in 80 per cent of these cases. Practitioners may be on the alert for this type of pellagra in these hard times not only because of economic distress but also because of nutritional impoverishment. The alcoholic who eats very little food but takes more or less freely of alcohol throughout the day and over a long period of time, who shows "rough skin" on the dorsum of the hands and forehead, who has more or less mouth symptoms and bowel disturbance, may be in the initial symptomatology of pellagra. Alcoholic patients may show few of such lesions or symptoms, except spinal cord or psychic disturbances.

These authors make the important observation that in the question of treatment without the liver diet, in these cases, 69 per cent of the patients died. Of those on the liver diet, only 20 per cent died.

Vitamin A.

No longer can practitioners ignore a serious study of the present knowledge of the vitamins. For many years, much confusion in publications tended to give the casual impression that no definite conclusions had been arrived at, and the whole question of these dietary essentials had not been clarified sufficiently to possess practical values in every day practice. However, the time may be said to be well at hand for a practical study of this subject by all kinds of practitioners—not only pediatrists and internists, but all practitioners. The membership of the medical societies of the state organizations may now look for such an elementary and practical treatment of this general subject by a competent committee, authorized by the American Medical Association. In a special article of June 4, 1932, page 1981, the *Journal of the American Medical Association* announces that a series of articles on "Present Status of the Knowledge of Vitamins" is to be published. The subject matter of these articles has been considered by the Council on Pharmacy and Chemistry and by the Committee on Foods, and, while opinions expressed are those of the authors, the publications are under the auspices of these joint Committees of the American Medical Association.

For a fairer statement of the general subject, no practitioner could wish a better agency whereby to reach an understanding of a subject such as this. This point in appreciation of the qualifications of the author may be no better illustrated than by noting that vitamin A is treated in the first article of the series by Lafayette B. Mendel, Sterling Professor of Physiological Chemistry, Yale University. Readers are urged to give careful perusal to the entire article. The story of the discovery of vitamin A is interesting to students of medicine and, in the opening pargraphs, Mendel discourses on these historical incidents. Then there is briefly outlined biologic tests employed in detecting vitamin A, by observing certain nutritive symptoms in animals that have subsisted on rations containing "the presence or absence of some source of vitamin A" as "the only variable factor."

Characteristics of the evidences of deficiency of vitamin A in diet bring the matter to a practical observation for the doctor. In young animals on nutrition deficient in vitamin A, interruption of growth is one of the first signs: eye symptoms—characteristic ophthalmia and xerophthalmia also stand out as spectacular signs of vitamin A deficiency. Then the occurrence of a tendency to respiratory infections, such as nasal and bronchial catarrh and pulmonary infection, is consequent upon the ration deficient in vitamin A. The animals show signs like sneezing, coughing, dyspnea and other respiratory signs. Certain animals under such a testing diet may show diseases of the glands of the mouth and of the renal passages as well. In addition to these phenomena, injury and deficiency of function to reproductive organs are noted and in the male sterility results.

Mendel explains to the reader the prevalent method of estimating the content of vitamin A in food. This discussion necessarily holds a certain academic interest for the practitioner and throws a light upon the complicity of such assays. The chemistry of vitamin A is described in plain terms as the author undertakes to unfold in popular terms this more or less difficult subject. It is of considerable importance to understand that vitamin A can be readily destroyed by oxygen or oxidizing agents at high temperatures. However, Men-

del affirms that recent studies indicate that "neither fruits nor vegetables lose appreciable amounts of vitamin A in home cooking or canning process. The vitamin A assay of cod liver oil preserved in the absence of air remains quite constant over periods of many months."

The reader may note in the following list a few common articles of diet, arranged according to their relative supply of vitamin A.

As an excellent source: Butter (high grade), carrots (raw), cod liver oil, cream, eggs, milk (cow's: fresh, dried, evaporated), spinach, watercress.

As a good source: Asparagus (green), beans (green), bread (whole meat; milk), cabbage (raw, green), carrots (cooked), cheese, corn (yellow), dandelion greens, lettuce, liver (beef), milk (human), orange juice, oysters, peaches, peas, potato (sweet), pumpkin, tomato.

Other items in food are given by Mendel under the titles of foods containing a fair amount and minimal or unappreciable amount of vitamin A.

Personality Problems for the Practitioner.

At the twenty-fifth annual meeting of the Southern Medical Association in New Orleans, last November, Roberts presented a thesis on Personality Pathology that may serve as a suggestion for comment here. At the end of a period, as it were, after thirty years of brilliant progress in scientific achievement in medicine, it might be quite appropriate for the practitioner to take cognizance of a field of approach to the distressed patient, that may have been all too much neglected by him in the rush of daily work. Roberts in detail portrays the complex wherein there is the disordered personality with disease of body and the disordered personalities seeking medical advice, unrelated to structural pathology within the body. The trend of medicine, with its diagnostic outlay in laboratory and hospital equipment, has been more to search for pathology and overlooked the deranged personality induced by environmental influences of the complainants.

As a text for such a discussion the author in minute detail elaborates in a descriptive amplification the fretting vexations found in the garrulous story of the distressed patient. For instance, the history of the second patient is depicted after this method of recording personality features: "He is an effeminate, pale, in-door boy, who, though 24, looked 20—Eyes were blue—hair light brown—fingers long and tapering—skin soft—a wistful face—struggling against fear—some half-hearted artist boy—uncertain—never found himself. He sleeps from 10:00 to 7:00—pushes a bookkeeping machine in an unimaginative—large corporation—from 8:30 to 5:00—30 minutes for lunch—enjoys walking with girls—church on Sunday. He is tired in evenings. He has a distended abdomen, belches, passes much gas—dull aching feeling in umbilicus,—pubis and small of back. He resents the way he has been treated by physicians; has taken medicine for seven months and ten days with no improvement—two series of X-rays—much laboratory work—could not afford to spend so much money," etc. So the appealing story goes, as Roberts draws the details from the patient. "This patient," says Roberts, "was a psychophysical problem—"

Robert pleads that the physician, the general practitioner, "does not need to be either an authority or even widely read in psychology to be capable of great service to this class of patients." An intelligent understanding of general principles in the field of psychology can but increase the usefulness of every medical man but the sort of superficial minutiae as one notes in popular magazines and newspaper articles—such "frothy nonsense and only the outer and lunatic fringes of a real psychology" is not helpful or dependable as an aid in medical inquiry of personality of patients. Practitioners may wisely apply themselves to physiologic psychology and thoughtfully inform themseleves upon the more or less normal functions of the mind in order that the pathologic personalities appearing before him in the chair of the consultation office may be the better interpreted and more skillfully treated. To decide whether one is dealing with pathology or functional misbehavior in the domain of personality is important to the practitioner. In these days of stress and strain when difficulties appear often quite insurmountable, one must find the path to well-being for the distressed, perplexed, and the cowed. To the "sick at heart," the practitioner must offer, based on a discerning understanding, the strength of a new purpose, quickened by cure of disease and by the rescue from the tangled cross-purposes of bodily dysfunction. The inferiority complex of a broken spirit or a wounded pride or a broken faith or an in-

sidious disease process must be written off the pages of daily life if patients are to receive the full service of modern needs from the practitioners of these and future times. Physicians need not be widely read in psychology. Through observation, broad reading, a catholic interest in the problems of this day and time, a discriminating understanding of the difficulties of human nature, the general practitioner may render a high order of service to the baffled and broken patient who appeals for treatment. As practitioners swing into action in these days of economic hardships and mental depression, they must be armed with a strong purpose. They must pierce the superficial layer of personality pathology. They must destroy the bewildering effect of such fears. They must draw upon the deeper fountains of human nature. They must tap the deep veins of manhood and womanhood that lie inherent in the personality somewhere. That must be the larger effort of the practitioner of the immediate present and the future.

It is true we know only in part—we can prophesy only in part. But with all, we may take on new determination as we recall the swinging lines of Pope as he portrays man's strength and weakness alike.

"Know then thyself, presume not God to scan,
The proper study of mankind is man.
Placed on this isthmus of a middle state,
A being darkly wise, and rudely great:
With too much knowledge for the skeptic side,
With too much weakness for the stoic's pride,
He hangs between; in doubt to act, or rest;
In doubt his mind or his body to prefer;
Born but to die, and reas'ning but to err;
Alike in ignorance, his reason such,
Whether he thinks too little or too much;
Chaos of thought and passion, all confused;
Still by himself abused or disabused;
Created half to rise and half to fall;
Great lord of all things, yet a prey to all;
Sole judge of truth, in endless error hurled,
The glory, jest, and riddle of the world."

Department of Clinical Education

Post-Graduate Clinics at the Medical College of Virginia.

Both the clinicians and the physicians attending considered the Post-Graduate Clinics at the Medical College successful, according to the report of Dr. Fred J. Wampler, Chairman of the Committee.

The program consisted of six clinics: (1) Pediatrics, by Dr. Lee Sutton, Jr. (2) Medical, by Drs. W. B. Porter, J. Morrison Hutcheson, William H. Higgins, and D. C. Ashton. (3) Surgical, by Drs. I. A. Bigger, C. C. Coleman, G. Paul LaRoque, and Carrington Williams. (4) Symposium on Fungus Diseases—Etiology and Pathology, by Dr. Frederick W. Shaw; Respiratory Tract, by Dr. E. C. Harper; Intestinal Tract by Dr. J. Powell Williams; Rectum and Anal Region, by Dr. E. H. Terrell; Skin and Appendages, by Dr. Thomas W. Murrell. (5) Symposium on Pellagra—Etiology, by Dr. J. H. Smith; Nervous Manifestations, by Dr. B. R. Tucker; Treatment, by Dr. W. B. Porter; Prevention of Pellagra and other Deficiency Diseases, by Dr. F. J. Wampler. (6) Obstetrics, by Dr. H. H. Ware, Jr.; discussion by Dr. M. E. Lapham.

The dates, May 27th and 28th, proved unsuitable in many cases and apparently limited the attendance. Change to a more convenient season is being considered for the next clinics.

The physicians registered were:

AYLETT—Dr. A. W. Lewis.
BEDFORD—Dr. C. H. Bondurant.
BERRYVILLE—Dr. C. H. Iden.
BOWLING GREEN—Dr. John G. Broaddus.
CHARLOTTESVILLE—Dr. M. E. Lapham.
COVINGTON—Dr. N. B. Jeter.
CULPEPER—Dr. O. K. Burnette.
ELKTON—Dr. M. T. McCulloch.
FLOYD—Dr. R. M. DeHart.
FOREST—Dr. B. A. Rice.
HAMPDEN-SYDNEY—Dr. Ray A. Moore.
HILLSVILLE—Dr. J. G. Cox
JETERSVILLE—Dr. James M. Habel.
LOTTSBURG—Dr. R. E. Booker.
LYNCHBURG—Dr. John Hundley, Jr.
MCKENNEY—Dr. R. H. Manson
MILLER'S TAVERN—Dr. E. L. W. Ferry.
NEWTOWN—Dr. R. D. Bates.
PETERSBURG—Dr. F. J. Wright.
Dr. John R. Gill.
RICHMOND—Dr. J. J. Anderson.
Dr. M. B. Baughman.
Dr. J C. Blanton.
Dr. M. O. Burke.
Dr. E. L. Copley.
Dr. Thomas F. Gill.
Dr. Oscar L. Hite.
Dr. R. Main.
Dr. Edward McCarthy.

Dr. C. L. Outland.
Dr. B. E. Strode.
STAUNTON—Dr. Charles W. Putney.
SUFFOLK—Dr. J. L. Rawls.
WASHINGTON, D. C.—Dr. A. Ray Dawson.

GEO. W. EUTSLER,
Executive Secretary,
Department of Clinical Education.

Prenatal and Postnatal Care.

With three of the ten meetings in the first series of post-graduate courses in prenatal and postnatal care completed, the enrollment of physicians has reached a total of seventy-five. Their attendance rate is slightly lower than five out of six, a rate which would be about nine out of ten if the entire absence of six members could be disregarded. Seventeen other physicians have visited the classes one or more times and increased the average attendance each week to 67.3. The classes have attracted still other visitors, a medical missionary, medical students, public health and hospital nurses and a public health official.

Not only the enrollment and the regular attendance but the interest manifested in the lectures, demonstrations and round-table discussions have given gratifying indication of the success of the course. Almost without exception physicians approve the general plan of post-graduate educational opportunities, but the supreme test comes when the actual presentation of a specific subject must measure up to their needs and demands. Unsolicited notes of appreciation, repeating the terms "interesting and enjoyable," "practical," "valuable," "profitable," show that this program bids fair to fulfill in marked degree the purposes for which it was established.

In two other respects a favorable start can be reported. Through the cooperation of members of the groups, clinical material, upon which much of the effectiveness of the course depends, has been made available in every case except one. Furthermore, Dr. Lapham, the Field Clinician, is receiving an increasing number of requests for examination of patients at the offices of physicians in his classes. Dr. Lapham sees no patients without the recommendation of a physician and communicates with them only through the physician. His out-of-class hours will be devoted to such consultations for educational purposes without cost, and the Joint Committee invites full use of his services.

Complete data upon the classes now being conducted in the circuit follow:

NELSON COUNTY—Previously reported enrollments: Drs. Miller, Randolph, Thaxton, Wills. Additional enrollments: Drs. Dickie, Everett, Horsley, Kidd, Tunstall. Total enrollments, 9. Average attendance, 8.3. Percentage of attendance, 92.6.

LYNCHBURG (AMHERST, APPOMATTOX, BEDFORD AND CAMPBELL COUNTIES)—Previously reported enrollments: Drs. Oglesby and Plunkett. Additional enrollments: Drs. J. P. Clark, C. W. Haden, Geo. T. Harris, J. H. Hoskins, John Hundley, Jr., P. G. Hundley, W. C. Rosser, J. A. Rucker, W. O. Tune, R. B. Ware. Visiting physicians: Drs. C. H. Bondurant, J. W. Davis, A. M. Owen, M. P. Rucker, E. M. Sandidge, R. M. Taliaferro, David N. Twyman, John Walker, Walter L. Williams, E. F. Younger. Total enrollments, 12. Average attendance, 13.3. Percentage of attendance of those enrolled, 76.5.

LEXINGTON (BATH, BOTETOURT AND ROCKBRIDGE COUNTIES)—Previously reported enrollments: Drs. Bailey, H. R. Coleman and H. R. Coleman, Jr., Cooke, Leech, Loyd, McClung, Seebert, Thurman, Tompkins, White. Additional enrollments: Drs. E. W. Dodd, T. F. Kennan. Geo. A. Torrence. Visiting physicians: Drs. C. S. Groseclose, W. A. Jeffress and M. T. Vaden. Total enrollments, 14. Average attendance, 10.7. Percentage of attendance of those enrolled, 70.

STAUNTON (AUGUSTA AND HIGHLAND COUNTIES)—Previously reported enrollments: Drs. Bradford, Campbell, Hartman, Murphy, Payne, Putney, Robertson, Roller, Tynes and Womack. Additional enrollments: Drs. C. B. Fox, J. F. Hubbard, H. G. Middlekauff, C. P. Obenschain, T. R. Rolston, J. B. Stone, J. F. Stover, H. F. White. Visiting physician: Dr. Q. H. Barney. Total enrollments, 18. Average attendance 16.3. Percentage of attendance of those enrolled, 95.5.

CHARLOTTESVILLE (ALBEMARLE, FLUVANNA, GREENE, LOUISA AND MADISON COUNTIES)—Previously reported enrollments: Drs. Harris, McQuade, Macon, Nokes, Rea, Williams. Additional enrollments: Drs. F. J. Clements, J. C. Coulter, H. S. Daniel, T. H. Daniel, E. D. Davis, E. D. Davis, Jr., W. A. Kyger, J. O. Mundy, R. L. Page, Geo. W. Parrott, E. B. Pendleton, H. W. Porter, C. F. Ross, J. W. R. Smith, E. A. Terrell, J. H. Yeatman. Visiting physicians: Drs. H. L. Baptist, L. G. Roberts, R. L. Taliaferro. Total enrollments, 22. Aver-

age attendance. 18.7. Percentage of attendance of those enrolled, 76.2.

Future Courses in Prenatal and Postnatal Care.

The Joint Committee has designated the area surrounding Richmond and Farmville for the second circuit of courses. The centers tentatively decided upon, subject to the approval of the local medical societies, are Richmond, Petersburg, Hopewell, Lawrenceville and Farmville; the period is August 22nd to October 28th. The preliminary steps to secure approval of the societies and begin the work of organization have been entered upon.

Because an interval of two weeks between the first and second circuits is permitted by the relatively late date for the annual meeting of the Medical Society of Virginia, the Joint Committee has investigated the possibility of a two weeks' intensive course on the Eastern Shore. By permission of Drs. Doughty and Denoon, presidents of the Accomac and Northampton Societies, most of the members were interviewed. Generally the proposal was received with great cordiality. Eleven physicians have enrolled for the course, and the details of organization will be completed when approval is formally voted by the societies. The dates for these meetings are August 8th-19th. The class will meet, at least in the beginning, in the Northampton-Accomac Memorial Hospital at Nassawadox.

Two additional circuits of five centers are planned by the Joint Committee for the fall and winter months. Choice of the centers will depend, as usual, upon the favorable action of local medical societies, and also upon the interest and demand manifested. It is fundamental to the success of a long-time educational undertaking, which it is hoped will include in the future additional branches of medicine, that local societies sponsor and arrange for the courses as a project of their own. Not only is the high expense of personal visitation saved by this method, but the society is strengthened and enabled to carry forward other educational programs more effectively. Representatives of the University of Virginia Extension Division, as the administrative agency of the Joint Committee, stand ready to attend medical society meetings for the purpose of explaining the course.

In the case of the present program there is probably a premium upon early organization. The expenses for the first year are entirely cared for by the appropriation of $2,500 made by the Medical Society of Virginia at Roanoke and the grant of $10,000 from the Commonwealth Fund. The Joint Committee felt it was advisable to establish at the beginning of the courses the principle of partial self-support by the students themselves, and for that reason it has set an enrollment fee of $5.00 per student for the course during the first year. For the proposed second and third years required to place this educational opportunity in every section of the state where it is desired, the grant of the Commonwealth Fund is tentative and reduced in amount. If an increase in the enrollment fee should become necessary, only the students during the first year will have the advantages of the minimum rate. Officers and members of societies in consideration of this fact are urged to begin arrangements for offering the course to their colleagues as promptly as possible.

Further information concerning the course will be furnished upon application. Descriptive folders for prospective students and the mimeographed lectures of the Field Clinician, as well as instructions to patients and blank cards for prenatal examinations, are available in reasonable quantities.

Geo. W. Eutsler,
Secretary Joint Committee.

Proceedings of Societies

The Rockbridge County Medical Society

Held its regular quarterly meeting on May 18th, at the Jackson Memorial Hospital, Dr. F. L. Thurman presiding. He introduced Dr. M. E. Lapham, who came under the auspices of a Joint Committee of the Medical Society of Virginia, the Medical College of Virginia and the University of Virginia, and in a most interesting talk told this society of the project for a course of instruction in pre-natal and post-natal care. He was followed by Mr. George W. Eutsler, secretary of the Joint Committee, who went into some details on the same subject.

Dr. Thurman next introduced Dr. Don. Peters, surgeon to the State Colony for Epileptics and Feebleminded, who gave a very enlightening address, his subject being "Sterilization Under the Law."

On June 1st, Dr. M. E. Lapham gave the first of the series of lectures in Lexington, this being a course of instruction in pre-natal and post-natal care of mother and child. These lectures will continue at weekly intervals for ten weeks. Considerable interest in this matter has been shown by the doctors in Rockbridge and adjacent counties, and a goodly number were on hand to hear the lecture. and the questions asked afterward showed that the subject was one that appeal to those present.

E. P. Tompkins. *Secretary.*

The Wise County Medical Society

Held its regular meeting at Norton, Va., on May 25th. They had an exceptionally good program as follows: The Treatment of Abdominal Injuries. by Dr. Jas. Williams, Richlands; Progress in the Treatment of Eclampsia, by Dr. D. O. Hamblin, Pennington Gap; Colles Fracture, by Dr. Fred M. Duckwall, Kingsport, Tenn., and The Etiology and Treatment of Non-Infectious Diarrheas of Infants, by Dr. S. H. Rivers, Calvin. Following this program, dinner was served at the Hotel Norton.

Dr. T. J. Tudor, Norton, is president of this society, and Dr. W. R. Culbertson, also of Norton, is secretary.

The Norfolk County Medical Society,

At its annual meeting, on June 6th, elected its delegates and alternates for the Richmond meeting of the Medical Society of Virginia and elected officers for the coming year. These are: President, Dr. Joseph D. Collins, Portsmouth; vice-president, Dr. W. P. McDowell, Norfolk, and secretary-treasurer, Dr. Lockburn B. Scott, of Norfolk. Dr. Scott is now entering upon his twelfth consecutive year in this office.

The Roanoke Academy of Medicine

Held its fourth hospital meeting for the current year at the Jefferson Hospital, Roanoke, Va., on June 6th, at 8:30 P. M. Dr. A. P. Jones was in charge of the program which was presented by members of the staff. The program was as follows:

Gall-Bladder Disease: A Comparison of Roentgen Ray and Operative Findings—Dr. C. H. Peterson.

Recurrent Ectopic Pregnancy—Dr. A. P. Jones.

Duplication of the Gall-Bladder—Dr. F. G. Slaughter.

Electrocardiographic Studies—Dr. G. B. Lawson.

Methods of Prognosis in Cancer of the Breast—Dr. A. F. Doyle.

Post-Operative Adhesions—Dr. H. A. Wilgis.

What We Have Accomplished with Good Milk—Dr. R. H. DuBose.

Resumé of 1932 Meeting of the American Surgical Association—Dr. H. H. Trout.

Dr. John A. Pilcher was elected to membership.

C. H. Peterson, M. D.,
Secretary-Treasurer.

The Piedmont Medical Society

Held its last meeting at Orange, Va., on June 2nd, with an attendance of forty. The scientific program included the following papers, all of which were discussed:

Benign Tumors of the Chest—Dr. E. C. Drash, University.

The Prevention of Measles—Dr. W. W. Waddell, University.

Problems of the Country Practitioner—Dr. F. G. Scott, Orange.

Officers elected for the ensuing year are: President, Dr. Percy Harris, Scottsville; vice-president, Dr. H. B. Mulholland, University, and secretary-treasurer, Dr. W. E. Bray (re-elected), University.

Southside Virginia Medical Association.

The regular meeting of this association was held on June 14th, at Suffolk, Va. The visiting doctors were cordially welcomed by Col. J. E. West, and Dr. R. L. Raiford, Franklin, responded to this address. There were about fifty doctors present and all the papers on the program were read and freely discussed.

A most interesting feature of the afternoon session was a paper on Childhood Type of Tuberculosis, by Dr. J. H. Smith, of Farmville. Following this, Dr. C. H. Dawson, Suffolk, gave an exhibition of children with tuberculin reactions. After this scientific program, the visiting doctors were entertained by the Suffolk profession at a delightful dinner.

The next meeting of this Association will be held on the second Tuesday in September, at Piedmont Sanatorium, Burkeville, Va. Dr. W. W. Wilkinson, La Crosse, is president, and Dr. R. L. Raiford, Franklin, secretary.

News Notes

Medical College Finals.

MEDICAL COLLEGE OF VIRGINIA

The ninety-fourth Commencement exercises of the Medical College of Virginia were held in Richmond from May 28th to 31st, inclusive. These opened with Student Night on May 28th in the form of dramatics in the Woman's Club auditorium. The Commencement sermon was given on the following evening by Rev. Dr. F. W. Burnham, at the Seventh Street Christian Church.

Monday was Alumni Day. Following a buffet luncheon for the Board of Visitors, Alumni, and Senior Classes at Cabaniss Hall, there was the golf tournament between members of the faculty and alumni. The annual meeting was held just after the Alumni dinner at the Commonwealth Club, that evening. Dr. J. Morrison Hutcheson, Richmond, was elected president of the Association for the coming year, succeeding Dr. J. M. Northington, of Charlotte, N. C. Dr. W. N. Hodgkins, Warrenton, Mr. Harry Brown, Dr. T. W. Wood, and Miss Pansy Fletcher, all of Richmond, were elected vice-presidents; and Drs. F. H. Beadles and C. L. Outland, both of Richmond, were continued as treasurer and secretary, respectively. On this occasion, the student body presented the College a portrait of the late Eppa Hunton, Jr., past president of the Board of Visitors. Dr. Stuart McGuire making the presentation for the students and Dr. W. T. Sanger, president, accepting it for the College; Dr. R. J. Walker, youngest member of the 1932 class, presented a silver loving cup on behalf of the alumni to Dr. W. J. Strother, who graduated sixty-one years ago and is the oldest alumnus of the College; and General Walter Drew McCaw, of Woodstock, who returned for his fiftieth commencement program was presented a silver cup by Dr. Roshier W. Miller, on behalf of the alumni, and at the closing exercises on the following day received the honorary degree of doctor of science.

The final exercises were held at the Mosque Theatre on the afternoon of the 31st, at which time Dr. William D. Cutter, Secretary of the Council on Medical Education and Hospitals of the American Medical Association, was the principal speaker. Dr. Sanger announced that a number of gifts had been made to various features of the College work. The annual reception and dance were held at Commonwealth Club at 9:00 P. M. that evening.

There were 161 in the graduating classes of the College, this year, ninety-one of these being in medicine. Their names with hospital appointments are given below:

MEMORIAL HOSPITAL, RICHMOND—Drs. Nathaniel Talley Ballou, Jr., Richmond; Nathan Bloom, Richmond; Richard Colbert Cecil, Bramwell, W. Va.; Winston Tucker LaNeave, Jr., Portsmouth, Ohio; Everett Walker McCauley, Union Ridge, N. C.; Duncan Roland McEachern, Wilmington, N. C.; Walter Lewis Nalls, Alexandria; Euston Spencer Robertson, Alcoma; William Mayer Robinson, Richmond; Lee Barnhardt Todd, Newport News; William Lawrence Weaver, Front Royal.

JOHNSTON-WILLIS HOSPITAL, RICHMOND—Drs. Holmes Gantt Byrd, Tazewell; Hawes Campbell, Jr., Enfield; Andrew Mathews McLaughlin, Richmond.

RETREAT FOR THE SICK, RICHMOND—Drs. Joseph Allen Eason, Hickory; Earle Carlton Gates, Highland Springs.

ST. LUKE'S HOSPITAL, RICHMOND—Drs. Frederick Lionel Finch, Jr., Brooklyn, N. Y.; John Hampton Miller, Thomas, W. Va.

SHELTERING ARMS HOSPITAL, RICHMOND—Dr. James Massie Gleason, Farmville.

GRACE HOSPITAL, RICHMOND—Drs. Richard Sterling Herring, Clinton, N. C.; Allen Whedbee Lane, Tarboro, N. C.

TUCKER SANATORIUM, RICHMOND—Dr. John Moses Mewborn, Snow Hill, N. C.

STUART CIRCLE HOSPITAL, RICHMOND—Drs. Albert Thomas Repass, Richlands; Charles Neill Scott, Smithfield, W. Va.

ST. ELIZABETH'S HOSPITAL, RICHMOND—Dr. Robert Jeffreys Walker, Jr., Tarboro, N. C.

NORFOLK PROTESTANT HOSPITAL, NORFOLK—Drs. Milton Hamlin Bland, Crewe; Karl Kenneth Wallace, Charleston, W. Va.

ST. VINCENT'S HOSPITAL, NORFOLK—Drs. Stephen Casagrande, Brooklyn, N. Y.; Carroll Spencer Credle, Swan Quarter, N. C.; Cornelius Eugene Gorman, Lynchburg; Stanley Hobson Powell, Portsmouth; Thomas Eldridge Stanley, Beaver Dam.

U. S. MARINE HOSPITAL, NORFOLK—Dr. Cy Kellie Lynn, Hickory, N. C.

LEWIS GALE HOSPITAL, ROANOKE—Drs. Hal

Davis, Roanoke; Walter Albert Porter, Monarat.

Roanoke General Hospital, Roanoke—Drs. Henry Merritt Escue, Tornado, W. Va.; Wade Hampton Saunders, Roanoke.

Elizabeth Buxton Hospital, Newport News—Dr. Murray Dick, Newport News.

Chesapeake & Ohio Hospital, Clifton Forge—Dr. Harold Bryan Damron, Clintwood.

Cheaspeake & Ohio Hospital, Huntington, W. Va.—Drs. Robert Guy Backwelder, Richmond; Rodolph Hedley Fowlkes, Chatham; Bruce Henderson Pollock, Huntington, W. Va.

Charleston General Hospital, Charleston, W. Va.—Drs. Charles Allen Easley, Jr., Chatham; George W. Grafton, Divide, W. Va.; Ralph Everett Pence, Pasco, Wash.; George Douglas Vermilya, Clifton Forge.

Kanawha Valley Hospital, Charleston, W. Va.—Dr. Thomas Gideon Faison, Richmond.

St. Joseph's Hospital, Parkersburg, W. Va.—Dr. Russell Felt Hufford, Welch, W. Va.

St. Mary's Hospital, Huntington, W. Va.—Dr. Frank Hogan Penn, Jr., MacDonald, W. Va.

Bluefield Sanitarium, Bluefield, W. Va.—Dr. Charles Tiffany St. Clair, Jr., Bluefield, W. Va.

Hazleton State Hospital, Hazleton, Pa.—Drs. John Bryan Haven Bonner, Raleigh, N. C.; Younger Lovelace Power, Sycamore.

Hamot Hospital, Erie, Pa.—Dr. Chase Gray Gage, Cambridge Springs, Pa.

Allegheny General Hospital, Pittsburgh, Pa.—Dr. George Randolph Wilson, Rochester, Pa.

St. Joseph's Hospital, Reading, Pa.—Dr. James Marshall Winkfeld, Winchester.

Gallinger Municipal Hospital, Washington, D. C.—Drs. Willard Cardwell, Lynchburg; Rupert Spencer Eaves, Jr., Rutherfordton, N. C.

Garfield Memorial Hospital, Washington, D. C.—Dr. Beverly Wilkins Nash, Baynesville.

N. C. Baptist Hospital, Winston-Salem, N. C.—Drs. Alexander McNeil Cox, Greensboro, N. C.; Joshua Jack Grizzard, Jr., Branchville.

City Memorial Hospital, Winston-Salem, N. C.—Drs. John William Griffis, Natural Bridge Station; Herman Sutton Powell, Enfield, N. C.

James Walker Memorial Hospital, Wilmington, N. C.—Dr. James Nelson Dawson, Kinston, N. C.

Wilmington General Hospital, Wilmington, N. C.—Dr. Lloyd Samuel Hayes, Morgantown, W. Va.

Rex Hospital, Raleigh, N. C.—Drs. John Ralph Johnson, Clayton, N. C.; William Wesley Stanfield, Creedmoor, N. C.

Elyria Memorial Hospital, Elyria, Ohio—Dr. Rodolfo Frank Fasoli, Stamford, Conn.

White Cross Hospital, Columbus, Ohio—Drs. Paul Douglas Hayman, Huntington, W. Va.; Beecher Love Smith, Huntington, W. Va.

St. Elizabeth's Hospital, Youngstown, Ohio—Dr. Emery George Kyle, Youngstown, Ohio.

Peoples Hospital, Akron, Ohio—Dr. Samuel Howard Mirmelstein, Newport News.

Holy Name Hospital, Teaneck, N. J.—Dr. Robert Bryan Hillsman, Richmond.

North Hudson Hospital, Weehawken, N. J.—Dr. Maurice Kamp, West New York, N. J.

Orange Memorial Hospital, Orange, N. J.—Dr. Paul Sherwin Richards, Butler, N. J.

Jersey City General Hospital, Jersey City, N. J.—Dr. James Stephen Vermillion, Welch, W. Va.

Baroness Erlanger Hospital, Chattanooga, Tenn.—Drs. Jesse Frank Hobbs, Edenton, N. C.; Joseph Halford Patterson, Broadway, N. C.

Municipal Hospital, San Juan, Porto Rico—Dr. Rafael Rufino Muniz, Anasco, P. R.

Scott White Clinic, Temple, Texas—Dr. Paul Dalton Rudd, Brown Summit, N. C.

Santa Rosa Hospital, San Antonio, Texas—Dr. John William Worsham, Hopewell.

Municipal Hospital, Hartford, Conn.—Dr. Eugene William Senter, Bristol.

Other graduates in medicine are:

Dr. Benjamin Drake Bosworth, Portsmouth.

Dr. Randolph Lee Clark, Jr., Cisco, Texas.

Dr. Bertha Margaret Davis, Asheville, N. C.

Dr. Scott Arthur Ford, Talcott, W. Va.

Dr. Robert Edwin Harris, Logan, W. Va.

Dr. Lewis Ellsworth Jarrett, Richmond.

Dr. Sydney Levy, Richmond.

Dr. Potter Abraham Richards, Pensacola, Fla.

Dr. David Winston Ruffin, Powellsville, N. C.

Dr. Lacy Lee Shamburger, Biscoe, N. C.

University of Virginia
Department of Medicine

Finals for the Medical School of the University were held in conjunction with those of the other departments and were enjoyable as always. Several dances and other entertainments enlivened the occasion. Commencement exercises got in full swing with the baccalaureate sermon on June 12th, by Bishop Francis J. McConnell, of the Methodist Church. That afternoon, there was an organ recital in the amphitheatre of Cabel Hall by Prof. H. R. Pratt, of the McIntire School of Music.

The Alumni Association held its annual business session on Monday at which time appropriate addresses were made, welcoming the 1932 graduates. All five-year classes from 1882 to 1927 were invited to hold class reunions at the University, this year. On the 13th, the forenoon was set aside for class reunions in an informal way. There was an open air luncheon, and individual class dinners in the evening, followed by an informal dance in the Memorial gymnasium. This was considered the most successful reunion since the centennial celebration in 1921. There were about 250 alumni present, the largest representation being from the class of 1902, with the class of 1922 coming second.

On the 14th of June, Maj. Leroy Hodges managing director of the Virginia State Chamber of Commerce, was the principal speaker at the graduation exercises which followed a formal academic procession. This was the second largest class in the history of the University, there being 357 to receive degrees. Forty-nine of these were in the Department of Medicine and are given below with hospital appointments:

University of Virginia Hospital, University—Drs. James Beebe Hawes, Huntington, W. Va.; Robert Beall Hightower, Stanton, Miss.; Leland Floyd Hobbs, Norfolk; Robert Tasker Humphries, Culpeper; Jean Barksdale Jones, Petersburg; Edgar Wilson Kirby, Jr., Portsmouth; John Edmund Roberts, Alexandria; Elizabeth Lewis Saunders, Blacksburg; Munford Radford Yates, Lynchburg; and Francis Arthur Snidow, Pearisburg.

University of Virginia, Department of Pathology—Dr. Walter Ansell Derrick, Pulaski (Instructor).

Protestant Hospital, Norfolk—Drs. Robert Ruben Coleman and Phillip Louis Miller, Norfolk.

Jefferson Hospital, Roanoke—Dr. John Randolph Perdue, Rocky Mount.

Johnston Memorial Clinic, Abingdon—Dr. John Peyton Snead, Jr., Washington.

Memorial Hospital, Richmond—Dr. Hugh Otto Staley, Rural Retreat.

Stuart Circle Hospital, Richmond—Dr. Frank Andes Strickler, Bridgewater.

Church Home and Infirmary, Baltimore, Md.—Drs. Frank Dunnington Daniel, Charlottesville; and James Lawson Cabaniss, Bedford.

Bon Secours Hospital, Baltimore, Md.—Dr. Jack Leon Canter, Petersburg.

Johns Hopkins Hospital, Baltimore, Md.—Dr. William Dabney Jarman, Farmville.

Baltimore City Hospital, Baltimore, Md.—Dr. Robert Faber Martin, Faber.

Duke University Hospital, Durham, N. C.—Dr. Clarence Dearborn Freeman, Jr., Portsmouth.

Lakeside Hospital, Cleveland, Ohio—Drs. Austin Brockenborough Chinn, Warsaw; John Walter Davis, Jr., Hampton; and John Hartwell Harrison, Danville.

Peoples Hospital, Akron, Ohio—Dr. Emanuel Greenspon, Newport News.

Massachusetts General Hospital, Boston, Mass.—Dr. Thomas Sterling Claiborne, Greenwood, Miss.

Boston City Hospital, Boston, Mass.—Dr. Randolph Bryan Grinnan, Jr., Norfolk.

Virginia Mason Clinic, Seattle, Wash.—Drs. George Henry Derieux, Jr., Tappahannock; Delmar Franklin Weaver, Jr., Orange; and Joseph Edgar Young, Jr., Greensboro, N. C.

Garfield Memorial Hospital, Washington, D. C.—Drs. Herman Lenowitz, Charlottesville; and George Garland Tanner, Brightwood.

Gallinger Municipal Hospital, Washington, D. C.—Dr. Henry Rolfe DuPuy, Norfolk.

Orange Memorial Hospital, Orange, N. J.—Drs. Wesley Fry, Charlottesville; and Melvin Wood McGehee, Carbon, W. Va.

Medical Center, Jersey City, N. J.—Dr. Clifton Jean Strauss, Belleville, N. J.

Mercer Hospital, Trenton, N. J. — Dr. Edward Knapp Hawke, Pennington, N. J.

St. Luke's Hospital, New York, N. Y.—Drs. Chas. Louis Gilbert, Richmond; and Hugh Grigsby Whitehead, Jr., Norfolk.

Post-Graduate Hospital, New York, N. Y.—Drs. Frederick Dixon Hollowell, Jr., Yazoo City, Miss.; Charles Morris Nelson, Richmond; and Robert Edward Westmoreland, Petersburg.

Tennessee Coal and Iron Hospital, Birmingham, Ala.—Dr. William Beverley Wilkins, Alexandria.

DePaul Hospital, St. Louis, Mo.—Dr. John Cameron McCluer, Jr., University.

Geisinger Memorial Hospital, Danville, Pa.—Dr. Carl Herbert Myerley, Danville, Pa.

University Hospitals, Iowa City, Iowa—Dr. Wilson Thomas Sowder, Rocky Mount.

Dr. Robert Stephen Millen, Malden, Mass., was also a member of the graduating class.

Thirty students and six alumni, elected this year to the Phi Beta Kappa national honorary fraternity, were initiated at the exercises on Monday evening. One of the alumni chosen for this honor was Dr. William Tate Graham, Richmond, Va., and the four medical graduates are Drs. Thos. Sterling Claiborne, Greenwood, Miss., Chas. Louis Gilbert, Richmond, Jean Barksdale Jones, Petersburg, and Elizabeth Lewis Saunders, Blacksburg.

Richmond is Calling You!

Your State Medical Society convenes in less than five months. Preparations for an enjoyable as well as profitable meeting are going ahead.

November is a glorious month in Richmond, and local golf courses are at their best in the fall. Don't forget your golf clubs.

Delightful entertainments are being arranged for the ladies.

The Scientific Program is taking shape and bids fair to be excellent.

Don't forget! The first week in November.

Program for Richmond Meeting.

Apropos to the above from the local committee, the Program Committee of the Medical Society of Virginia has selected Diseases of the Heart as the subject for its symposium at the Richmond meeting. This has been divided into four parts: Etiology and Prevention of Heart Disease; Acute and Subacute Endocarditis; Diagnosis and Treatment of Coronary Disease, and The Use of Drugs in Heart Disease. Papers on these subjects will be prepared and read respectively, by Dr. J. Edwin Wood, University; Dr. Walter B. Martin, Norfolk; Dr. George B. Lawson, Roanoke, and Dr. W. B. Porter, Richmond. Drs. Manfred Call, Richmond, and B. M. Randolph, Charlottesville, have been invited to open the discussion on these papers.

As an innovation, if sufficient interest is shown, there will be a *Question Box*, the questions to be answered at a set meeting.

Letters have just been mailed all members, asking for titles from those who wish to offer papers at this meeting. This letter also requests that any questions for the Question Box should be in the Secretary's hands by September 1st, that arrangements may be made for having them answered.

Be sure to accept the Local Committee's invitation to attend this meeting.

Doctors Interested in Civic Affairs.

There seems an increasing interest on the part of doctors in civic affairs, judging by the number elected to offices in the recent elections held throughout Virginia. Some of the doctors elected as mayors in their respective cities are: Dr. J. Fulmer Bright, Richmond; Dr. Charles R. Anderson, Winchester; Dr. W. N. Breckinridge, Fincastle; and Dr. M. C. Newton, Narrows.

Doctors' names noted among the list of city councilmen in their various cities are: Dr. Albert E. Wilson, Norfolk; Dr. S. B. Moore, Portsmouth; Dr. W. T. Chitwood, Rocky Mount; Dr. S. B. Perry, Hopewell; and Dr. R. S. Griffith, Waynesboro.

In Richmond, Drs. Roshier W. Miller and Clifton M. Miller were elected members of the City School Board; Dr. R. T. Hawks, Carson, was re-elected a member of the School Board of Prince George County; and Dr. P. W. Miles has been re-elected a member of the Board of School Trustees of Danville.

Library Building of Rchmond Academy of Medicine Nearing Completion.

The handsome new red brick building, being erected in this city to serve as headquarters of the Richmond Academy of Medicine and to house the splendid library and relics given the Academy by Dr. Joseph L. Miller, of Thomas, W. Va., is nearing completion. In this building also are to be housed the executive offices of the Medical Society of Virginia.

The building is located at the northeast corner of Twelfth and Clay, immediately opposite the Confederate Museum, and under the same roof with the new library of the Medical College of Virginia, with which it is con-

nected by a covered portico. Across the side street is McGuire Hall of the Medical College of Virginia, which will connect with the College library by an underground pass.

The structure is fireproof and consists of two stories and a basement. The cost is approximately $85,000. The basement has a large dining hall, kitchen and furnace room; on the first floor will be the offices to be used by the Medical Society of Virginia, the room for the Miller collection, and the lounge; and on the top floor will be the auditorium with a seating capacity of 200 and several rooms suitable for committee rooms or offices.

The building will be opened in time for the sessions of the Medical Society of Virginia in Richmond, November 1st, 2nd and 3rd.

Married.

Dr. William G. Stephenson, of the class of '30, Medical College of Virginia, and Miss Mamie Louise Barnes, both of Chattanooga, Tenn., on June 15th. Dr. Stephenson has been on the resident staff of the Baroness Erlanger Hospital, in Chattanooga, for the past two years and, effective July 1st, will be resident physician and surgeon.

Dr. Randolph L. Anderson, Richmond, Va., and Miss Ruth Grove, of Lewisburg, Pa., June 30th.

Dr. Charles Powell Cake, formerly of Norfolk, Va., but now of Detroit, Mich., and Miss Janette Osborn, of Lawrenceville, Va., May 28th. Dr. Cake graduated in medicine from the University of Virginia, in 1925, and is now connected with the Herman Kiefer Hospital, in Detroit.

University of Virginia, Department of Medicine, News.

On May 3rd, Dr. J. H. Neff spoke before the Southside Post-Graduate Society in Hopewell, Va., on the subject of Malignancy of the Genito-Urinary Tract.

Dr. J. C. Aub, Associate Professor of Medicine at the Harvard Medical School and Secretary of the Ella Sachs Plotz Fund, visited the Medical School on May 6th and 7th.

Dr. D. C. Wilson read a paper on Atypical Facial Neuralgia before the Section on Neuro-Psychiatry of the American Medical Association in New Orleans on May 11th. On June 9th he presented this subject at the meeting of the American Neurological Association in Atlantic City.

Dr. H. W. Wade, formerly chief pathologist to the Culion Leper Colony, P. I., at present Medical Director of the Leonard Wood Memorial Fund for the Study of Leprosy, visited the Medical School on May 8th.

Dr. E. P. Lehman represented Williams College at the Centennial Celebration Exercises of the University of Richmond on May 12th. On May 16th to 18th he attended the meetings of the American Surgical Society in New Haven, Conn.

At the meeting of the University of Virginia Medical Society on May 23rd Dr. H. E. Jordan spoke on Ovarian Gestation; Dr. J. E. Kindred gave a description of A Young Human Embryo; and Dr. C. L. Fifer gave an account of his studies of the Mammary Gland of the Rabbit.

On June 2nd, Dr. H. E. Jordan addressed the University of Virginia Medical Alumni Society in New York City.

On June 9th, Dr. C. C. Speidel presented an account of his studies on Living Nerves during Growth and Regeneration before the American Neurological Association in Atlantic City.

Dr. C. S. Lentz read a paper on Hospital Administration—Its Practical Application, before the Tri-State Hospital Convention, meeting in Richmond from May 17th to 19th.

Dr. Franklin G. Ebaugh, Professor of Psychiatry at the Medical School of the University of Colorado and Representative of the National Commission for Mental Hygiene, visited the Medical School on May 27th.

On June 14th, a class of forty-nine students was graduated with the degree of Doctor of Medicine. Six additional students were awarded the degree of Master of Science, one each in Surgery, Psychiatry, Physiology, Biochemistry, Pharmacology and Histology.

Major Edgar Erksine Hume, U. S. A., Inspector of Reverse Officers Training Camps, visited the Medical School on June 14th.

New Notes, Medical College of Virginia.

The Carnegie Corporation, New York City, has made an appropriation of $10,000.00 toward the maintenance of the library of the Medical College of Virginia, which will this summer be housed in a handsome new building.

Adjoining the new library of the college the Richmond Academy of Medicine has built its home and library. This will contain the famous Joseph L. Miller collection of rare first editions, engraving, silhouettes, medical curios, etc. The headquarters of the Medical Society of Virginia will also be located in the Academy of Medicine building.

The 1932 class of the Medical College of Virginia numbered 161. There were ninety-one graduates in medicine, twenty-eight in dentistry, twenty-six in pharmacy and sixteen in nursing. These represented twelve states, two foreign countries, and forty-three counties of Virginia.

The commencement exercises began Saturday night, May 28th, with a play, *Marrying Ann*, given by the dramatic club of the college. Sunday, May 29th, the commencement sermon was delivered at 8 P. M., by Dr. F. W. Burnham, of the Seventh Street Christian Church, his subject being *Unearned and Unpaid Increments*. The graduating exercises were held at the Mosque Theatre, Tuesday, May 31st. Dr. William D. Cutter, newly elected secretary of the council on medical education and hospitals, American Medical Association, gave the commencement address. The honorary degree of Doctor of Science was conferred upon Walter Drew McCaw, M. D., Brigadier-General, United States Army, retired, who is a distinguished alumnus of the class of 1882. Seventeen of the graduating class were awarded commissions in the reserve corps of the United States Army. Seven of the class in pharmacy received the degree of Bachelor of Science in pharmacy. For high scholarship twelve of the graduates in medicine were elected to membership in the Brown-Sequard Society; three in the dental graduating class were elected to membership in Omicron Kappa Upsilon, and five in the school of pharmacy were elected to membership in Rho Chi.

On May 27th-28th the annual post-graduate clinic of the college, in cooperation with the department of clinical education of the State Medical Society, was held with more than thirty physicians from various sections of the State in attendance. Both medical and surgical clinics were held with case demonstrations by Dr. I. A. Bigger and Dr. W. B. Porter. A symposium of fungus diseases was given by Dr. Frederick W. Shaw, Dr. Dean Cole, Dr. Powell Williams, Dr. E. H. Terrell and Dr. Thomas W. Murrell. A study of pellagra was conducted by Dr. J. H. Smith, Dr. W. B. Porter and Dr. F. J. Wampler. The obstetric clinic was under the direction of Dr. H. Hudnall Ware, Jr.

The second post-graduate clinic for Negro physicians was scheduled for June 20th-July 2nd. This is being held at the St. Philip Hospital, a unit of the hospital division of the college. This includes lectures, demonstrations of cases, assignment of cases for study in the wards of the St. Philip hospital, as well as in the out-patient department of the college. The course includes work in medicine, pediatrics, obstetrics, surgery, dermatology and clinical pathology.

Those who attended this clinic last year were so enthusiastic that a second clinic was planned and it is believed that those attending the clinic this year will find an even wider scope of work than that given in the course last year.

The student body of the college has presented the college a portrait of the late Eppa Hunton, Jr., who for many years was chairman of the Board of Visitors. The portrait was presented at the alumni dinner, May 30, 1932, by Dr. Stuart McGuire and accepted for the college by Dr. W. T. Sanger, president of the college.

Dr. Pauline Williams, associate professor of pathology, Medical College of Virginia, attended the biennial convention of Alpha Epsilon Iota Fraternity at Portland, Oregon, June 10th-12th. While in Portland Dr. Williams extended a cordial invitation to this fraternity to hold its next biennial convention in Richmond. This organization embraces a membership of 1,500 women physicians and women medical students, the chapters being established in twenty-two Class A medical schools throughout the country.

Dr. Frank L. Apperly, of the department of pathology of the University of Melbourne, Australia, recently entered upon his work as professor of pathology and head of the department at the Medical College of Virginia. Dr. Apperly was a Rhodes scholar at Oxford where he took the B. A., M. A., and M. D., degrees. He had extended experience with the British Army during the World War. For a number of years he has been teaching pathology and doing research work in this field at the University of Melbourne.

News Notes from Duke University School of Medicine and Duke Hospital.

On June 8th, the eighteen members of the first graduating class of the Duke University School of Medicine received the degree of Doctor of Medicine. The degree of Bachelor of Science in Medicine was awarded to five students who had completed satisfactorily six quarters in the School of Medicine, had done creditable extra work in some one department and had written an acceptable thesis. In the School of Dietetics, two students who had completed successfully three and one-half years of college work and the required course of one year in the School of Dietetics received the degree of Bachelor of Science and the Certificate of Graduate Dietitian.

On the evening of June 8th, the graduating class planted ivy from Sir William Osler's home at Oxford, at the entrance to the medical school; at this ceremony Dr. William Sydney Thayer, of The Johns Hopkins Hospital, and a former pupil of Sir William Osler, made the address. Dr. Thayer also gave a clinic at the hospital on cardiac disease.

On June 9th, Dr. William D. Riley, of the United States Public Health Service, held a clinic at the hospital on Public Health Control of Syphilis.

At the commencement exercices, held at Wake Forest College June 6th, Dr. Wilburt C. Davison, Dean of the Duke University School of Medicine, received the honorary degree of Doctor of Science.

Student Nurses' Allowances.

Figures received through the American Nurses' Association show that student nurses in 78 per cent of nurses' training schools get a monthly allowance. An additional 10 per cent are paid an allowance but are charged tuiton. Seven per cent neither get an allowance nor pay tuition, and 5 per cent pay tuition only.

Student allowances vary from the more common $10 a month to as high as $60 a month. The higher amounts are usually paid by mental hospitals, some of which frankly state that they pay student nurses the same salaries as they pay attendants.

Tuition charges run all the way from $5, which covers part of the cost of books, up to a very few schools that charge as much as $300.

Dr. Benjamin E. Hunt,

Who recently returned to Virginia after a year's residency in obstetrics at the Jersey City Hospital, Jersey City, N. J., has located in Newport News, Va., for the practice of obstetrics. He has offices in the Buxton Clinic Building and has recently been appointed staff obstetrician to the Elizabeth Buxton Hospital.

The American Psychiatric Association.

The eighty-eighth annual meeting of this Association, including its section on convulsive disorders, epilepsy, and allied maladies, was held in Philadelphia, May 30th, to June 3rd, inclusive. The general meeting was presided over by William L. Russell, M. D., president, of White Plains, New York, and the section on convulsive disorders was conducted under the chairmanship of D. S. Remier, M. D., of Skillman, New Jersey.

More than five hundred psychiatrists, neuropsychiatrists and mental hygienists from the United States and Canada were in attendance. From Virginia were registered in attendance: Dr. Paul V. Anderson, Westbrook Sanatorium, Richmond; Dr. J. H. Bell, Superintendent, Colony for the Feebleminded and Epileptic, Colony; Dr. G. W. Brown, Superintendent, Eastern State Hospital, Williamsburg; Dr. O. B. Darden, Westbrook Sanatorium, Richmond; Dr. William F. Drewry, Director, Bureau of Mental Hygiene, State Department of Public Welfare, Richmond; Dr. John R. Gill, Medical Staff, Central State Hospital, Petersburg; Dr. T. L. Gemmill, Medical Staff, Central State Hospital, Petersburg; Dr. James K. Hall, Westbrook, Sanatorium, Richmond; Dr. D. L. Howell, Jr., Medical Staff, Colony for the Feebleminded and Epileptic, Colony; Dr. A. H. Kiessling, Falls Church; Dr. James King, Saint Alban's Sanatorium, Radford; Dr. David C. Wilson, neurologist and psychiatrist, University of Virginia, University.

Each of the other Southern States also showed a considerable representation, chiefly of institutional psychiatrists.

The program embraced a wide range of addresses and papers, followed by much discussion, dealing with psychiatric and mental hygiene problems, many of which were of concern to the general medical profession as well as to neuro-psychiatrists and mental hygienists. An important feature of the printed program, which was mailed to every member in advance of the meeting, was an abstract of each paper, showing the line along which the author would develop his subject. This was quite informative. While to a considerable extent there were noticeable trends toward interest shown on the part of many of the papers and discussions of scientific psycho-analysis in its relation to human behavior, pro and con, and the like, much interest was shown in the general meetings and in the several round tables in early diagnosis, investigation, research and more modern treatment from the physical standpoint of mental disorders, a plea for more extended improved medical service in mental hospitals, further development of mental health or psychiatric clinics, out-patient work of mental hospitals and of general hospitals, especially for incipient mental cases, dealing with mental hygiene problems in universities and colleges, psychotherapeutics in training and custody in correctional and penal institutions, value of the work of psychologists and psychiatric social workers, psychiatry in relation to penology, value of organized mental hygiene clinics in connection with both juvenile and adult courts, probation and observation system for criminals with alleged mental disorder, etc. State-wide mental hygiene work and psychiatric clinics in relationship to mental hospitals and the medical profession were emphasized. In this connection the implication was that the success of psychiatry and mental hygiene, especially the prevention of mental disorder, depends upon an intelligent public opinion and co-operation in which the medical profession, especially psychiatrists, should act in the role of leadership.

In the development of a better understanding between psychiatry and the courts, the increasing value of the juvenile courts and the state mental hygiene clinic service, the workings, with satisfactory results, of the non-partisan psychiatric commission appointed by the court to investigate persons indicted for crime, observation of such cases in special departments at two of the State hospitals, the extended psychiatric service in connection with the penitentiary, etc., it was pointed out in a brief contribution to the program by the writer the progressive lines along which Virginia has been moving for several years in these phases of psychiatry.

The following officers were elected for the ensuing year: President, James V. May, M. D., of Boston; Vice-president, George H. Kirby, M. D., of New York City; Secretary-treasurer, Clarence O. Cheney, M. D., of New York (re-elected). Boston was selected for the next annual meeting—1933.

The Association has from its inception and organization in the forties exercised increasing influence in promoting psychiatry and especially the institutional care and treatment of the mentally sick. The *American Journal of Psychiatry*, under the auspices of the Association, fills a most important place in scientific medical journalism. The close relationship that has always existed between the Association and Virginia psychiatry is evidenced in part by the facts that among its originators and charter members were two of the State hospital medical superintendents, and in more recent years two other superintendents and psychiatrists were presidents, and that several annual meetings of the Society have been held in this State.

W. F. D.

Dr. James C. LeFon,

Who has just completed his internship at Protestant Hospital, Norfolk, Va., is locating for general practice at Dumbarton, Richmond, R. F. D., Va. He is an alumnus of the Medical College of Virginia in the class of '31.

Virginia Society of Oto-Laryngology and Ophthalmology.

The annual meeting of this society was held May 14th, at Virginia Beach, Va., under the presidency of Dr. Clarence Porter Jones, of Newport News. The following officers were elected for the ensuing year: President, Dr. Frank Smart, Norfolk; vice-president, Dr. Charles St. Clair, Bluefield, W. Va.; secretary-treasurer, Dr. H. Grant Preston, Harrisonburg (re-elected). The Executive Council is composed of Dr. H. B. Stone, Roanoke; Dr.

Fletcher Woodward, University, and Dr. Clarence Porter Jones, Newport News.

Dr. William Burton was elected a new member, and Drs. John Dunn and William Olds were elected honorary members.

The next meeting will be held in Harrisonburg.

$125,000,000 Spent Annually on Healing Cults in United States.

Approximately $125,000,000 annually, equivalent to 12 per cent of the amount spent on the 142,000 doctors of medicine, is expended in the United States on 36,150 other practitioners who hold themselves out to treat the sick —osteopaths, chiropractors, naturopaths and allied healers, and Christian Science and New Thought practitioners—according to Louis S. Reed, Ph. D. in a report presented to the Committee on the Costs of Medical Care. He estimated that the people of the United States annually spend $42,000,000 for the services of the nation's 7,650 osteopaths; $63,000,000 on 16,000 chiropractors; $10,000,000 on 2,500 naturopaths and allied groups; and another $10,000,000 on the 10,000 Christian Science and New Thought healers.

A study of 7,800 representative families revealed that only fifty-two families considered healers in these cults as their family practitioners. Only 1.3 per cent of the families having medical care during the year used them exclusively, although 10 per cent resorted to healing cult practitioners at one time or another.

Addition to New York Polyclinic Medical School and Hospital.

The Marine Roof atop the new wing of the New York Polyclinic Medical School and Hospital was opened on Thursday, May 26th, at 3:00 P. M. The Honorable Grover A. Whalen, General Chairman, George Washington Bicentennial, New York City Commission, officiated. The ceremonies were attended by about three hundred people.

Dr. Joseph Bear,

Richmond, Va., announces that in the future his practice will be limited to obstetrics and diseases of women. His offices are at 301 East Franklin Street, this city.

Dr. Booker Lee,

Roanoke, Va., announces the removal of his office to 534 Shenandoah Life Building, that city, where he will continue his practice in diseases of the eye, ear, nose and throat.

One Hundred and Twenty-five Years of Service.

Early in June, the University of Maryland, Baltimore, celebrated the one hundred and twenty-fifth anniversary of its founding with interesting exercises, which included addresses by a number of prominent medical men. The University of Maryland has the fifth oldest medical school in the United States, this department having been established in December, 1807. In the course of its career, it has absorbed the Baltimore Medical College and the College of Physicians and Surgeons, both prominent schools in their time.

The South Carolina State Medical Association,

At its annual meeting this Spring, installed Dr. James R. Young, of Anderson, as president, and elected Dr. Robert E. Abell, Chester, as president-elect. Dr. Edgar A. Hines, Seneca, was re-elected secretary. Spartanburg was selected for the next place of meeting.

The Association of American Physicians,

Meeting at Atlantic City, in May, elected Dr. G. Canby Robinson, New York City, as president for the ensuing year, and re-elected Dr. James H. Means, Boston, as secretary. It was voted to held the next annual meeting in Washington, D. C., May 2-3, 1933.

Graduate Fortnight of the New York Academy of Medicine.

Tumors, benign and malignant, will be the theme of the 1932 Graduate Fortnight of The New York Academy of Medicine, to be held from October 17th to the 28th, inclusive. The medical profession of the country is invited to participate in the intensive two week study of this important medical and surgical subject.

There is no charge for attendance at any of the clinics or meetings, but registration is required for participation in the hospital demonstration clinics.

Concurrent with the Fortnight, and for an added week thereafter, there will be housed in the Academy building an exhibition of anatomical specimens numbering approximately 3,000 units. A number of the sections in the exhibition will be subjected to lecture demonstrations at regular intervals.

Ten evening meetings have been arranged during which tumor growths in various parts of the human anatomy will be discussed. Among the speakers are included Drs. W. Gordon M. Byers, Edwin Beer, Charles A.

Elsberg, James Ewing, Donald C. Balfour, Daniel F. Jones, Dean Lewis and Francis Carter Wood, and others.

Thirty afternoon clinical meetings and demonstrations have been arranged in eighteen of New York City's leading hospitals, including Bellevue, Lenox Hill, Presbyterian, St. Luke's, Fifth Avenue, Post-Graduate, Neurological Institute and others.

A complete program and registration blank for the clinics and demonstratons may be secured by addressing The New York Academy of Medicine, 2 East 103rd Street, New York City.

American Therapeutic Society.

At the thirty-third annual meeting of the Society, held in Baltimore, Md., on May 16th and 17th, the following officers were elected for the coming year: President, Dr. Frank Smithies, Chicago; vice-presidents, Dr. Julius Friedenwald, Baltimore; Dr. Alpheus F. Jennings, Detroit, and Dr. Grafton Tyler Brown, Washington, D. C.; secretary, Dr. Oscar B. Hunter, Washington, D. C.; and treasurer, Dr. Alphonse McMahon, St. Louis.

The Old Dominion Medical Society,

Composed of colored doctors in Virginia, held its annual meeting in Richmond, June 14th-16th, with an attendance of more than one hundred doctors. Dr. E. B. Harris, of Crewe, succeeded Dr. H. G. Chissell, of Alexandria, as president. Officers elected for the ensuing year are: President-elect, Dr. P. A. Scott, Newport News; vice-presidents, Drs. C. J. Waller, Staunton, and J. D. Williams, Manassas; secretary, Dr. J. H. Blackwell, Jr., Richmond, and treasurer, Dr. A. B. Green, Norfolk, both re-elected. It was decided to hold the 1933 sessions at Bay Shore Hotel, Buckroe Beach, Va.

The American Proctologic Society,

Which met in Memphis, Tenn., in May, elected Dr. Curtice Rosser, of Dallas, Texas, president. Dr. Rosser has, for several years, been secretary of this Society.

Dr. Thomas Hal Clarke, Jr.,

For some time at Thorpe, W. Va., is now located in Christiansburg, Va., where he is engaged in general practice. He is a member of the class of '25, University of Virginia, Department of Medicine.

Officers in Sons of Confederate Veterans.

At the recent meeting of General Turner Ashby Camp No. 218, Sons of Confederate Veterans, in Winchester, Va., Dr. George G. Snarr was chosen second lieutenant commander and Dr. Hunter H. McGuire surgeon of the Camp.

Dr. C. C. Cooley

Resigned his position with the U. S. Public Health Service, Marine Hospital, Ellis Island, N. Y., May 1st, to take up an internship in Eye, Ear, Nose and Throat work at the New York Post-Graduate Hospital, in New York City. Dr. Cooley is an alumnus of the University of Virginia, Department of Medicine, in the class of '29.

"The Southern Surgeon,"

Published in Atlanta, Ga., made its initial appearance in April, as a quarterly. While *The Southern Surgeon* will publish many papers by men who do not live in the South, it aims to provide surgeons of the South "with excellent papers, and it hopes particularly to enlist their interest by showing them what their neighbors are doing." It is to be the official publication of the Southeastern Surgical Congress and, in its first few issues, will present the unpublished papers read before that Congress at its 1931 Assembly, and then those of the 1932 session.

Dr. L. Minor Blackford, Atlanta, is editor and there is an Advisory Editorial Board of prominent surgeons from Baltimore to New Orleans. The management has great plans for the future of the journal.

We congratulate them upon their excellent beginning and extend our good wishes for the future.

Dr. Mercer Promoted in Medical Corps.

Brigadier-General S. Gardner Waller, Adjutant General of Virginia, has announced the appointment of Dr. Nelson Mercer, of Richmond, as Lieutenant-Colonel, Medical Corps, Virginia National Guard, and his assignment to the State Staff in the capacity of State Surgeon, effective May 27, 1932.

Dr. Mercer has served in the Virginia National Guard almost continuously since 1913. In 1924 he graduated at the Medical Field Service School, Carlisle Barracks, Pa., and was promoted to Lieutenant-Colonel, Medical Reserve, in 1926.

Danville General Hospital.

Dr. John A. Hawkins has bought the hospital in Danville, Va., recently operated by Dr. Edmunds. This has been undergoing repairs and, it was expected, would be opened early in July, as the Danville General Hospital. There will be twenty to twenty-five beds and it will be a general hospital with an open staff. There will be no training school and the hospital will use only registered nurses.

The American Board for Ophthalmic Examinations

Will hold an examination in Montreal, Canada, on Monday, September 19th, at the time of the meeting of the American Academy of Ophthalmology and Oto-Laryngology.

Necessary applications for this examination can be procured from the Secretary, Dr. William H. Wilder, 122 South Michigan Avenue, Chicago, Ill., and should be sent to him at least sixty days before the date of examination.

Dr. Draper to Remain at Head of Health Work in Virginia.

In response to an inquiry made of him by a representative of the MONTHLY, Dr. Warren F. Draper stated that there was no foundation to the report recently circulated that he was soon to be recalled to Washington. The conditions under which he came to Virginia as State Health Commissioner are unchanged, and no consideration has been given by Surgeon-General Hugh S. Cumming to the question of his return.

Improvement in Eye Conditions.

The National Society for the Prevention of Blindness, in its report for 1931 states that in 1931 only 7.5 per cent of new admissions to schools for the blind were victims of babies' sore eyes, a decrease from 28 per cent in 1907. This cause of blindness, it points out, can be entirely eradicated by preventive treatment of the eyes of every new-born baby. It further states that during the year, twenty-two additional sight-saving classes were organized, bringing the total number in the United States to 398. These were in 114 cities in twenty-three different States.

Medical Society of the District of Columbia.

There was a total registration of 351 for the annual meeting of this Society in Washington, May 4th and 5th, and it was a most satisfactory meeting in every way. The following officers were elected: President, Dr. Harry A. Fowler; vice-president, Dr. Henry R. Schreiber and Dr. H. Gladys Kain; secretary-treasurer, Dr. Coursen B. Conklin (re-elected). All officers are of Washington.

U. S. Civil Service Examination.

The U. S. Civil Service Commission, Washington, D. C., announces open competitive examination for the position of Medical Technician (Bacteriology and Roentgenology). Applications must be on file with the Commission in Washington, not later than July 19, 1932.

The American Surgical Association,

At its annual meeting, recently held in New Haven, Conn., elected Dr. Arthur Dean Bevan, Chicago, as president for the coming year, and re-elected Dr. Vernon C. David, Chicago, secretary.

Dr. Robert F. Gillespie,

After practicing for a year at Switchback, W. Va., has returned to Virginia and is located at Lebanon, Va., for general practice. Dr. Gillespie is an alumnus of the Medical College of Virginia in the class of 1921.

Dr. Joseph B. Graham,

Of the University of Virginia, Department of Medicine, class of '28, for the past year resident surgeon at Memorial Hospital, Richmond, Va., has located in Talladega, Ala., where he will be engaged in general surgery.

Dr. Karl S. Blackwell,

Richmond, Va., has been elected president of the local Council of Social Agencies for 1932-33.

Drs. Greer Baughman and W. Brownley Foster, also of Richmond, are members of the executive committee of the Council.

Fresh Air Camp for Crippled Children.

A permanent summer camp for physically handicapped children is to be built on Pine Lake, Mich., by the W. K. Kellogg Foundation, according to the *Journal of the American Medical Association.* The plans include twenty-four cottages, which will accommodate 200 children for a period of eight or nine weeks each year. An administrative building, a small emergency hospital, and quarters for the staff will complete the plant. The staff will include physical therapists, counselors, a secretary, a quartermaster, and a dietitian.

Dr. Grant R. Elliott,

Of the class of '31, Medical College of Virginia, who completed his internship at the U. S. Marine Hospital, Norfolk, in June, is locating at Orange, Va., for general practice.

Dr. Emily Gardner,

Who recently located in Richmond, Va., has joined the medical staff of the Y. W. C. A., as an examiner.

Dr. Thomas C. Lawford,

Of the class of '29, University of Virginia, Department of Medicine, who later served an internship at the Elizabeth Buxton Hospital, Newport News, Va., is now located in Hilton Village, Va. He is Acting Health Officer and Coroner for Warwick County, during the illness of Dr. H. W. Curtis, who is under treatment at Southern Pines, N. C., for arterial hypertension.

Dr. Riggin to Succeed Dr. Grant.

Dr. I. C. Riggin has been appointed as director of county health work in Virginia to succeed Dr. H. G. Grant, and will enter upon his duties on August 1st. Dr. Grant recently resigned to accept the position of dean of the School of Medicine at Dalhousie University, Halifax, Nova Scotia, of which he is an alumnus, and left Virginia for his new work, the middle of June.

Dr. Riggin was formerly connected with the health work in Virginia and has had wide experience in this field. He returns to this State from New York where he has been executive director of the American Heart Association.

'Tis An Ill Wind That—

Now is the time for all good city officials to realize that the low price of real estate and the need to provide "made work" for the unemployed gives them a splendid opportunity to acquire and develop park and playground areas, a writer in the *American City* suggests. According to many park and city-planning authorities, an acre of open space is needed for every 100 inhabitants, and of this from 30 to 50 per cent should be devoted to active recreation uses.

For Sale—

Office furniture and instruments for use in general practice, account death. Address Mrs. L. F. James, 2318 Grove Avenue, Richmond, Va.—(*Adv.*)

Hourly Nursing Service.

The Private Duty Nurses' Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

For information, dial 3-1656. (*Adv.*)

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Obituary Record

Dr. Charles Rollin Grandy,

Prominent and much beloved physician, and President of the Medical Society of Virginia in 1929-30, died at his home in Norfolk, June 10, 1932, after an illness of two years, of heart trouble—though he had been up and attending to part of the work in his great fight on tuberculosis until a few weeks prior to his death.

Dr. Grandy was born in Norfolk, April 9, 1871; and received his B. A. and M. D. degrees at the University of Virginia, graduating with high honors in 1892. He then served as interne eighteen months at Charity, and sixteen months at Hudson Street Hospitals, New York City. After this he went to Germany, and took up special pathological work for two years, in Freiburg, Frankfort and Berlin, returning to Norfolk and taking up the practice of internal and preventive medicine in 1898. He was soon *drafted*, so to speak, in the fight on tuberculosis, and has been devoting his life to this great problem ever since. He organized

the Anti-Tuberculosis League of Norfolk, and had been president of that organization for twenty-seven years. In recognition of this public service, the City of Norfolk dedicated the "Charles R. Grandy Sanitarium" to his honor a few months ago.

Dr. Grandy was not only prominent in local but also in State and National affairs, contributing many valuable papers and discussions. He was President of the Norfolk County Medical Society, 1900-1901; member of the Seaboard Medical Association, The American Medical Association, The American Public Health Association, American Child Health Association, National Tuberculosis Association, Fellow of The American College of Physicians, and served on many committees, and as councilor, before becoming president of the Medical Society of Virginia, in October, 1929. He was a member of the Norfolk School Board for thirteen years, and its chairman for twelve years. He was active in church work and had served as vestryman in Christ Church, and was also active in many business organizations of Norfolk. His wife, a son and daughter by a former marriage, survive him.

P. St. L. M.

Dr. Thomas Jackson Sims,

Prominent physician of Newport News, Va., died June 9th, following a nine months' illness with cancer. He was sixty-nine years of age and graduated from the Medical College of Virginia in 1897. Dr. Sims had practiced in Newport News for thirty-five years, and had been a member of the Medical Society of Virginia for thirty years.

Dr. William Thomas Warriner,

Crewe, Va., died June 5th, at the home of his daughter, in Richmond, Va. He was a native of Amelia County, Va., and eighty-eight years of age. Dr. Warriner graduated from the College of Physicians and Surgeons, Baltimore, in 1872. He served for some time in the Confederate Army and had practiced in Crewe for forty years. Dr. Warriner had been a member of the Medical Society of Virginia for thirty-eight years. He is survived by a daughter and two sons, Dr. W. R. Warriner, Crewe, and Dr. B. B. Warriner, of the U. S. Army.

Dr. George Bonaparte Wood, Sr.,

Well-known physician of Emporia, Va., died June 9th. He was a native of Northampton Co., N. C., and was seventy-four years of age. Dr. Wood graduated from the College of Physicians and Surgeons, Baltimore, in 1889. He was formerly a member of the Medical Society of Virginia. His wife and five children survive him. Two of his sons are Drs. G. B. Wood, Jr., and A. H. Wood, both of Emporia.

Dr. William Williams Keen,

Noted surgeon of Philadelphia, died June 7th, after an illness of several months. He was ninety-five years of age and a graduate of the Jefferson Medical College of Philadelphia, in 1862. Dr. Keen was a former president of the American Surgical Association, the American Medical Association, and other national medical organizations. He served his country in three wars and won decorations from France and Belgium for his services in the World War. Dr. Keen is survived by four daughters, one of whom is Mrs. Walter Jackson Freeman, president of the Auxiliary to the American Medical Association.

Dr. Leonard A. Slater

Died at his home in Richmond, Va., May 19th. He was a former resident of New Kent County, Va., and was sixty-three years of age. Dr. Slater graduated from the University of Maryland, School of Medicine, in 1891. His wife and four daughters survive him.

Dr. Leland Osgood Mauldin,

Greenville, S. C., died May 6th of heart disease following influenza. He was fifty-three years of age and a graduate of the Medical College of the State of South Carolina in 1903. Dr. Mauldin was a past president of the South Carolina Medical Association and was on the staff of the Greenville City Hospital.

Dr. Albert Montgomery Dupuy McCormick,

Medical Director, Rear Admiral, U. S. Navy, retired, died, April 20th, of coronary thrombosis. He was sixty-six years of age and a graduate of the University of Maryland, School of Medicine, in 1888. Dr. McCormick made his home in Berryville, Va.

Dr. William McSpadden Copenhaver,

Helena, Montana, was drowned recently. He was fifty-six years of age and a graduate of the University College of Medicine, Richmond, Va., in 1900. Dr. Copenhaver specialized in diseases of the eye, ear, nose, and throat.

One of a series of advertisements in *The Saturday Evening Post,* the *Literary Digest,* and other national magazines, setting forth some of the accomplishments of Medical Science in the diagnosis, treatment, and prevention of disease. *Parke, Davis & Co.*

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What a simple operation it seems. But what an amazingly complicated and vital operation it really *is!* He is listening to the life-sounds of your body.

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And when he takes your temperature or blood-pressure, when he examines your nose and throat and ears, when his skilful, gentle fingers search for a tender spot in your abdomen —when he does all these things, he is employing scientific methods whose usefulness in revealing your body's secrets has been developed by decades of study and experience. But only the trained eye and ear and hand of your physician can *use* them scientifically.

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OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

Vol. 59, No. 5.
WHOLE No. 962.

RICHMOND, VA., AUGUST, 1932

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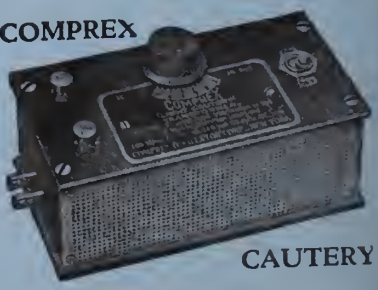

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GASTRIC AND DUODENAL SECRETION.*

Tabulated Comparison of Stimuli.

ROBT. S. PRESTON, M. D., Richmond, Va.
Associate Professor in Medicine, Medical College of Virginia.

Gastric analysis is receiving renewed interest. This is due to the fact that the data obtained therefrom has become more reliable and easier of interpretation.

A comparative study has been made of the gastric and duodenal acidities and secretions. Various stimuli were employed.

There have been 501 Ewald, 200 alcohol and 100 histamine tests on 478 miscellaneous patients. A duodenal drainage followed nearly all the alcohol and histamine gastric stimulations. The majority of subjects were ambulatory patients. A knowledge of their clinical condition was available and this knowledge was often helpful in a correct interpretation of the information derived from gastric analyses. Personal performance, time, skill, experience and familiarity with physiology are also needed. The range of acidity for classification should be more uniform. This is just one instance of the many possible variables in comparison and interpretation.[1] Many ideas have changed relating to the physiology, pharmacology and nerve control of the stomach.

Acidity was determined by the Toepfer method, titrating with tenth normal sodium hydroxide. Dimethylamidoazobenzol and phenolphthalein were used as indicators.

Ewald test breakfasts were fractionally extracted thirty minutes after ingestion and thereafter every fifteen minutes for an averaged length of time of ninety minutes. This test gave trouble more frequently than others.

Table No. 1 shows a classification according to the maximum free acid.

The acidity at sixty minutes after ingestion classified the cases differently from the final fractional study in one-third of the Ewald tests.[2] One case (S. B.)† illustrates how easily we may interpret erroneously. The Ewald test showed no free acid on the 40-50-60 and seventy-five minute extractions but at ninety minutes the free acid was 24 and total 40. It is noteworthy that the peaks of the highest acid curves obtained by the Ewald test were reached late (95 mins.) after ingestion, also their frequent association with upper respira-

†References are made to graphs.

TABLE No. 1.—EWALD

501 TESTS

NORMAL 20—39%	180 =	36%
HYPERACID 40+%	158 =	32%
HYPOACID 1—19%	117 =	23%
ACHLORHYDRIA	46 =	9%

IN NORMAL GROUP % ACID SUSTAINED 60 MINS. OR MORE IN 24
IN HYPER. GROUP % ACID SUSTAINED 60 MINS. OR MORE IN 28
IN HYPER. GROUP % ACID APPROX 40% IN 20
IN HYPO. GROUP % ACID APPROX. 10% IN 17

HIGHEST ACIDITIES OBTAINED

FREE	TOTAL	TIME	INTUBATION	CASE	AGE	DIAGNOSIS
140	150	90	#10	F. J.	57	BRON. FIBROSIS DUOD. ULCER.
100	115	100	1	L. B. M.	49	ANTRUM, PLEURISY, HEMORRHOIDS.
90	115	100	1	J. C. P.	57	EMPHYSEMA, BRONCHIECTASIS.
90	100	105	4	L. C. L.	57	BRON. FIBROSIS, PTOSIS.
70	100	75	1	L. C. L.	57	
87	100	90	1	W. E. A.	38	SINUS, CHR. BRONCHITIS.
85	95	80	1	S. J. H.	41	ASTHMATIC BRONCHITIS.
80	100	95	1	E. D. E.	38	DUOD. ULCER.
80	105	90	1	C. S.	63	DIABETES.

*Read before the Medical Society of Virginia at Roanoke, October 6-8, 1931.

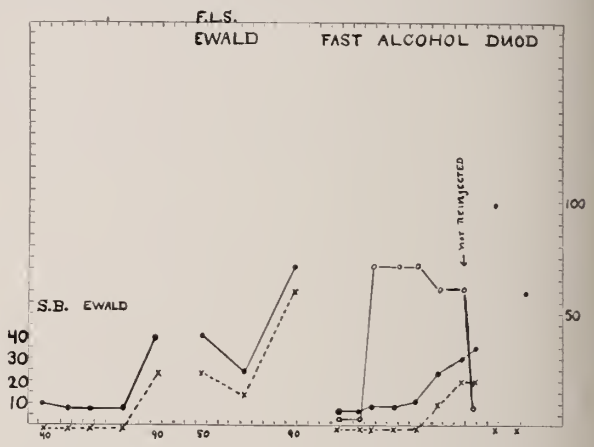
tory tract infections. These infections induce gastric dysfunction frequently. Perhaps at first there is an irritation with resulting hyperactivity of the peptic glands. Later they wear out, become atrophied, sclerosed or dammed up with the result that little or no acid is secreted.

Insertion of a tube into the stomach is thought to increase the production of alkaline gastric mucus, alkaline saliva and alkaline fluids regurgitated from the intestines. It also increases the gastric acid as shown in Table No. 10.

Table No. 2.—Highest Acidity in Fasting Stomach

Free	Total	Case	Age	Diagnosis
5 70 80	10 80 90	J. F. A.	40	Sinus, Bronchitis
55 60	60 70	G. F.	35	Aortitis, Adiposity, Fibroid
70 74 66	80 80 70	F. J.	56	Bronchial Fibrosis, Duod. Ulcer
0 20 50 80	5 50 60 82	"		
15 65 70	30 80 90	"		
65 80	78 90	K. B.	50	Duod. Ulcer, Appendicitis, Cholecystitis
45	65	E. I. J.	35	Splanchnoptosis

Alcohol was injected through the tube after withdrawal of the fasting gastric contents at ten minute intervals. High acids in the fasting stomach usually classify such cases as hyperacid.[3] The average extraction from the fasting stomach was 15.2 c.c. for ten minutes observed for an average length of time of twenty minutes. The usual amounts of 7 per cent alcohol injected were 50 to 80 c.c. More and stronger dilutions were used on occasions when it was known that the stomach emptied rapidly or had exhibited a weak response to a previously used stimulus. Little difference was noted. Withdrawals of the alcohol and reinjections after filtration were done at ten minute intervals, ten cubic centimeters being withheld each time for examination. The number of specimens obtained depended mainly upon the emptying time of the stomach. One case (F. L. S.) may be cited to show that many specimens may be required for correct interpretation. In this instance after 80 c.c. of alcohol had been injected, three specimens withdrawn at ten minute intervals showed no free acid and the succeeding withdrawals showed free 8, 15 and 15 and total acid 20, 25 and 30. The amounts withdrawn were 80, 80, 80, 60, 60



S. B.—No free HCl for 90 mins. after Ewald. Diag.—arteriosclerosis, arthritis.
F. L. S.—No free HCl 35 mins. after alc.; slow emptying; Ewald hyperacid. Usual duodenal high total and absent free acid. Diag.—diseased tonsils, otitis, eczema, constipation.

Key to Graphs
o = volume in c.c.
. = total acid.
x = free acid.
Horizontal—5 min. spaces.
Perpendicular—acidity.

and 5 c.c. This test was not continued long enough. The Ewald in this case had previously shown hyperacidity. Complete extraction was facilitated by withdrawal or further insertion of the tube and by the patient assuming different postures. This influence is shown in selected instances in Table No. 3. It apparently indicates a different degree of acidity in different portions of the stomach. Increase in the amounts withdrawn is usually noted after change of posture, which was from a sitting to a reclining one.

Regurgitation from the duodenum could be detected usually. Surprisingly little change in the acidity curve was caused by the presence of bile macroscopically.

After the patient turned on the right side and three or four ounces of warm sterile water were injected, the tube was fed gradually so as to allow the tip to enter the duodenum. This occurred in less than ten minutes in the majority of cases. After syphoning off the water, one or more specimens from the duodenum were obtained. Then ninety to two hun-

Table No. 3.—Effect of Change of Posture

Case	Stimulus	Free	T. A.	Amt.	Time	Posture change at arrow
W. M. A.	F	5	15	20	0	
	"	15	20	30	10	
	"	0	8	10	15	
	Alc. 60	4	5	90	18	
		20	28	30	20	
		25	32	50	30	←
		32	40	30	40	
		30	38	30	50	
J. F. A.	F	18	22	30	0	
	Alc. 50	4	7	30	10	
		32	45	20	20	
		x	x	0	30	
		50	52(Bile)	110	45	←
				not reinject	50	
		52	64 (Bile)	15		
J. B.	F	17	32	12	0	
	"	20	40	10	5	
	Alc. 50	5	7	50	7	
		35	40	45	17	
		40	45	30	27	
		55	65	35	37	←
		67	77	30	47	
		40	50	5	57	
K. B.	F	65	78	50	0	
	"	78	90	10	5	
	Alc. 60	12	18	60	7	
		50	55	50	17	
		54	58	110	27	←
		64	75	50	37	
		45	65	50	47	
		60	75	30	57	
L. J. E.	F	5	15	30	0	
	"	5	15	5	15	
	Alc. 60	5	7	70	20	
		20	30	30	30	
		22	30	15	40	←
		50	55	8	50	
M. F.	F	0	5	10	0	
	Alc. 60	0	5	5	10	
		0	2	30	12	
		0	4	12	20	
		0	4	100	30	←
		0	4	70	40	
		0	5	50	50	
L. A. S.	F	0	4	10	0	
	Alc. 60	0	2	35	10	
		0	4	5	20	
		7	10	25	30	←
		5	10	30	40	
		5	10	15	50	
		6	12	5	55	
W. H. W.	F	0	4	60	0	
	Alc. 60	2	7	50	10	
		2	4	50	12	
		0	4	50	20	
		0	6	30	30	
		12	15	30	45	←
		4	12	30	60	
		5	15	12	70	
		0	10	5	80	

Table No. 3.—Effect of Change of Posture

Case	Stimulus	Free	T. A.	Amt.	Time	Posture change at arrow
J. L. F.	F	0	10	6	0	
	"	20	48	20	10	
	"	0	12	3	20	
	Alc. 50	3	5	30	30	
		15	20	12	40	
		34	36	80	50	←
		28	40	70	60	
		26	35	70	70	
		17	30	65	80	
C. L. L.	F	0	2	5	0	
		5	10	2	10	
	Alc. 60	5	10	60	15	
		35	38	70	25	
		52	55	50	35	
		65	70	70	45	
		75	85	110	55	←
		90	100	100	65	
		95	105	70	75	
		92	105	60	85	
				Not reinject	95	
		85	90	20		

dred cubic centimeters of warm 33 1/3 per cent magnesium sulphate solution were slowly injected. Often it was found expedient to change the position of the patient, to resort to gentle suction, or to abdominal massage. Coughing and deep breathing also seemed to expedite the flow. After nearly every duodenal stimulation, four being found frequently necessary, there was a titration for acidity made of an extraction after the bile had diminished or had ceased to flow. Biliary drainage is considered in this study mainly as it concerns acidity. If a duodenal drainage is contemplated on the same intubation with a gastric stimulation, alcohol is preferred as a stimulus. It is the test that is least objectionable.

Table No. 4 gives a classification of cases according to their acid value as determined by the alcohol test. There are three acid values given for each group. With the value used in Table No. 1 there is a decrease in the percentage of normal and hyperacid groups with a corresponding increase in the other two. The acid values for the alcohol test grouping comparable with those used for the Ewald test are hypoacid 1 to 14, normal 15 to 29, hyperacid 30+. Corresponding values for total acid are 11-24, 25-39 and 40+. As shown, the highest free and total acids are reached at practically the same time. In eighty-six cases (43 per cent) the acid curve was still ascending when the last titration was made.

Table No. 4.—Alcohol Tests

200 Tests

Normal				
Free HCl	15—29%	45=22.5%	Total Acid (25—39%)	42=21%
"	20—39	57=28.5%		
"	30—49	50=25 %		
Hyperacid				
Free HCl	30+	83=41.5%	Total Acid (40+)	85=42.5%
"	40+	51=25.5%		
"	50+	31=15.5%		
Hypoacid				
Free HCl	1—14	36=18 %	Total Acid (11—24)	37=18.5%
"	1—19	56=28 %		
"	1—29	83=41.5%		
Achlorhydria		36=18 %	Total Acid (0—10)	36=18%

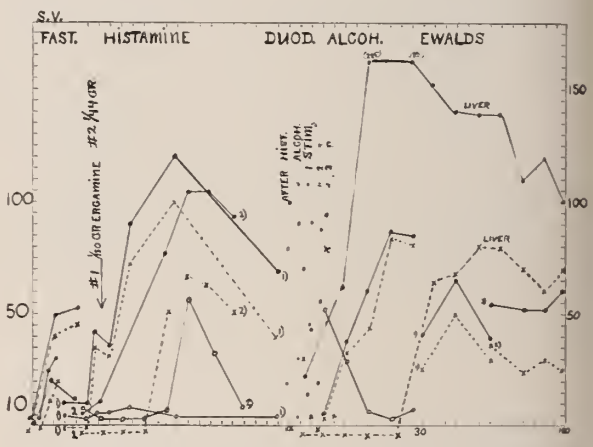
Highest acid reached in

Minutes	15	25	30	35	40	45	50	70	100
Free Acid	38	43	39	14	25	8	24	8	1
Total Acid	38	42	44	13	28	8	24	7	1

Histamine is the greatest stimulus to gastric acidity and secretion. It acts on the acid secreting glands.[4] Only those cases were given the histamine secretagogue that had previously received the Ewald and alcohol tests. All three tests were given the patients within various lengths of time, some within two days. The effect of histamine stimulations of a patient on successive intubations apparently agree more uniformly than is the case with other stimuli.

After fasting stomach contents had been obtained at intervals, a sphygmomanometer cuff was applied to the arm of the prone patient. The injection of histamine was given distally to the cuff, thereby enabling one to observe the blood pressure and control the degree, duration and time of occurrence of the reaction to a certain extent. The cutaneous reaction to histamine also can be used as a control for the dose. If a slight skin reaction occurred from a scratch with a 1 to 500 solution of histamine, the general reaction from the intramuscular injection was usually negligible and *vice versa*.[5]

Histamine was employed in solution (1 to 500), in ampoules (Imido) and in tablet form (Ergamine). Irrespective of the disposition, age, sex or size, ergamine acid phosphate gr. 1/44 was preferred. Ergamine was used in doses ranging from 1/11 to 1/150 of a grain. The gastric response and general effects varied with the dose but more so with the individual susceptibility. Acidity and secretion increased proportionately to the dose in most instances. Acidity responded quicker than secretion in all but one instance. Acidity increased with small



No response in secretion to 1/150 gr. ergamine with higher acid curve (1) than was obtained after 1/44 gr. Acid high in fasting stomach and after alc. and liver extract and in duodenum. Diag.—diabetes, bile tract trouble.

amounts of histamine that did not influence secretion (S. V.) There has not been seen a response in secretion without one in acidity.

Table No. 5 classifies 100 tests in which histamine in various doses had been given. Pa-

Table No. 5.—Histamine

100 Tests

	Acid		Secretion	
	Highest in 10 Min. Intervals			
Normal				
Total	90–124%	37	15–34 c. c.	30
Free	80–114%	38		
Hyperacid			35+ c. c.	39
	125+%	18	(70c. c. in 2 cases)	
	115+%	14	(120c. c. in 1 case)	
Hypoacid			6–14 c. c.	15
	10–89%	31		
	1–79%	29		
Achylia			0–5 c. c.	15
	0–9%	14		
	0	19		

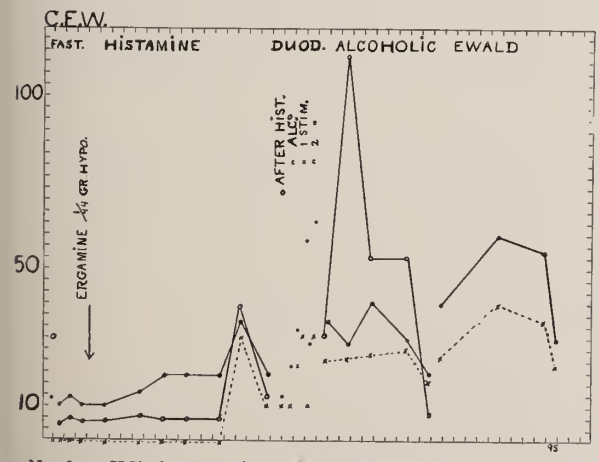
Table No. 6.—Ergamine Gr. 1/44

64 Tests					
Acid			Secretion		
Highest in 10 Min. Intervals					
Normal				15–34 c. c.	18=28%
Total	90–124%	27=	42%		
Free	80–114%	26 =41%			
Hyperacid					
125+%		12=	19%	35+	28=44%
115+%		11 =17%			
Hypoacid					
10–89%		15=	23%	6–14	8=12%
1–79%		16 =25%			
Achylia					
0–9%		10=	16%	0–5	10=16%
0%		11 =17%			

tients with subacidity or achlorhydria were preferred and more sought for probably. This explains the high percentage of achylias. The range of acidity and secretion chosen for classification was arbitrary. Perhaps 35 c.c. is too low for ten minutes maximum secretion as 39 per cent fell into this class. Perhaps the range for the hypoacid group is too high.

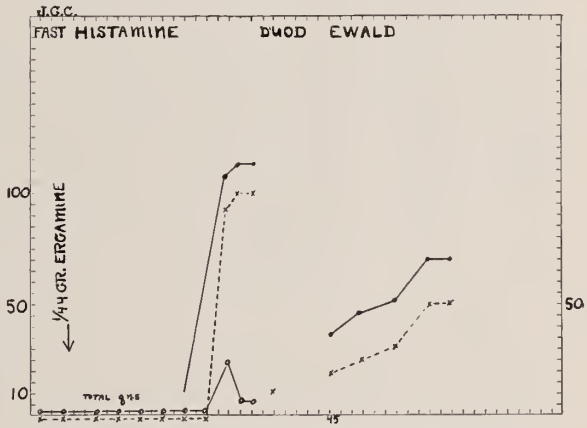
Table No. 6 classifies sixty-four tests in which was used ergamine acid phosphate gr. 1/44. It shows little difference from Table No. 5. There is an increased percentage in the normal at the expense of the hypoacid groups.

No alarming effects have occurred from histamine. It is well to have adrenalin or pituitrin in case of need. Although the effects are transient they may be very disagreeable. It is hoped and believed that this annoying feature will be eliminated. Tachycardia, flushed face, local flare and wheal usually occurred with a fall in blood pressure. These effects were sometimes barely noticeable even though a good gastric response occurred. Generally the gastric and systemic effects were proportionate in degree and duration. A gastric response to histamine always occurred when there had been one to bread or to alcohol. A response to bread but none to alcohol has been found more frequently than one to alcohol and none to bread. Allergic instability or its opposite may account for unexpected responses to stimuli.



No free HCl for 60 mins. after ergamine gr. 1/44. Duod. extractions all acid. Diag.—nasopharyngitis, bile tract trouble.

In one instance (C. E. W.) in which normal acid concentration existed with both the Ewald and alcohol tests, there was absence of free acid on each of six extractions, after ergamine gr. 1/44 had been given. On the seventh and eighth extractions the free acid was 30 and 10. There was no response in secretion until the seventh extraction. Another

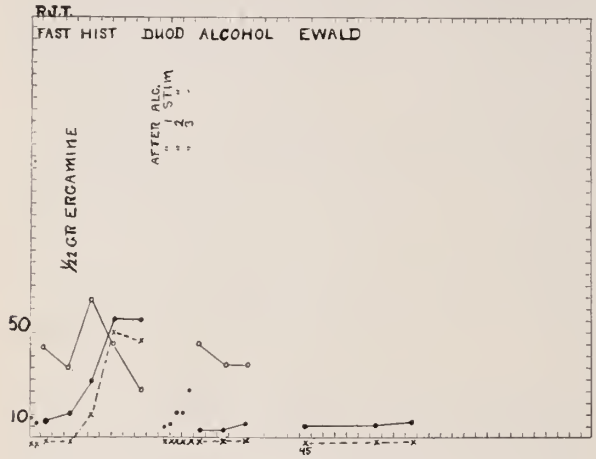


Similar to graph No. 3. Diag.—nasopharyngitis, bronchitis, constipation.

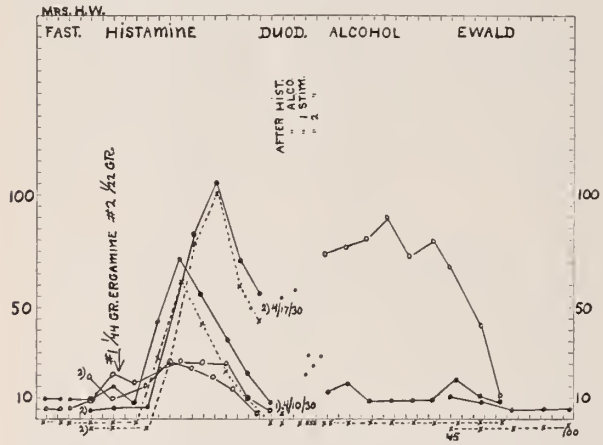
case (J. G. C.) showed no free acid after ergamine gr. 1/44 for six extractions, sixty minutes, and no increased secretion. On the seventh extraction of 24 c.c. the free acid was 90 and total 105.

In considering the variations in the effects of one stimulus from another or of the same stimulus in repeated tests on the same subject many factors are concerned. Uniformity in results distinguished repeated histamine tests on a single subject. This test should be done on all cases of achlorhydria and many of the subacid. It is believed that it possesses therapeutic, as well as diagnostic value. Acid and secretion are increased, mucus lessened, plugs and debris increased and then diminished. The theory that mucus exerts some plugging effect is plausible and washing it away seems practical. This cleansing is aided by the increase of secretion and contraction from histamine. With repeated histamine tests, evidence of in-

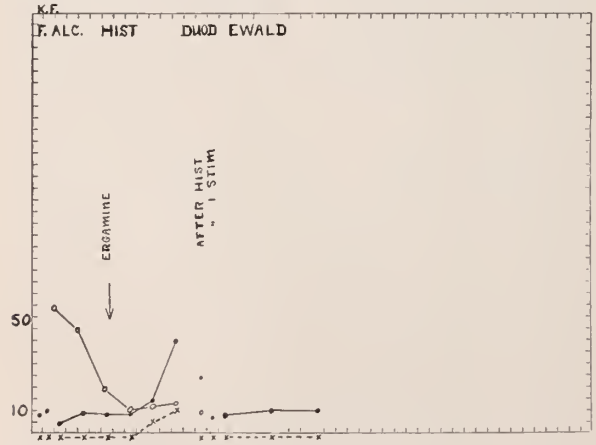
flammation diminish and acidity increases. In four cases (R. J. T., H. W., K. F., O. T.) histamine stimulated the secretion of free hydrochloric acid. They had failed to show free



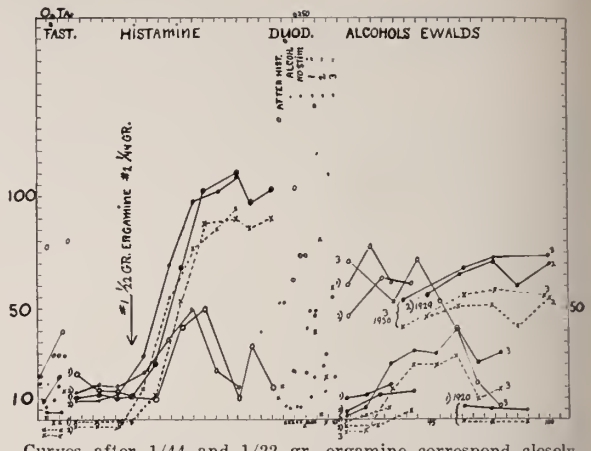
Graphs Nos. 5, 6, and 7 acid after histamine but none after other stimuli. Diag.—otitis, bronchitis, arteriosclerosis.



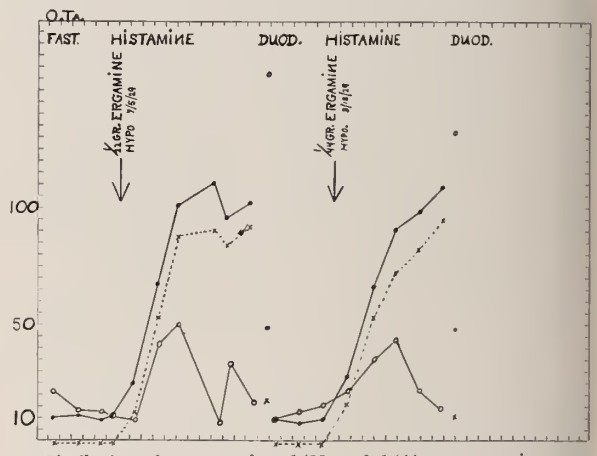
Curves after 1/44 and 1/22 gr. ergamine. Effect on secretion similar on acid proportionate to dose. Slow emptying on alc. Diag.—diseased tonsils, bronchial fibrosis, enteroptosis.



Alcohol and histamine on one intubation. Diag.—myocarditis, nephritis, hypoacid.

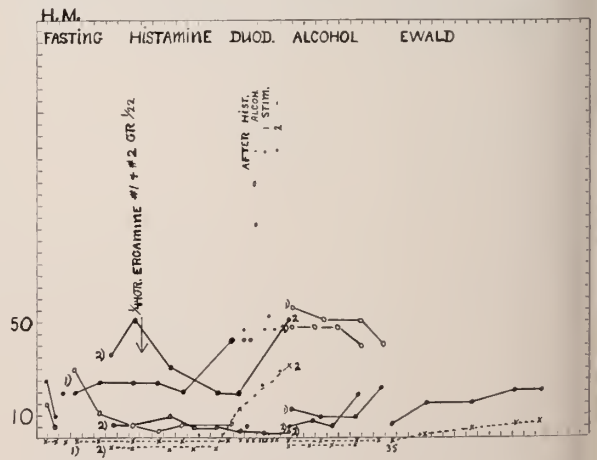


Curves after 1/44 and 1/22 gr. ergamine correspond closely. Shown also in graph No. 9. Large volumes in fasting stomach and duodenum. Ewald in 1920 showed absent free HCl—11/11/1929 and 1930 hyperacid and sustained. The histamine tests were 7/5/29 and 8/18/29. The alcohol tests were 9/2/28, 3/23/29 and 2/7/30. Diag.—oral sepsis, pleurisy.



Similarity of curves after 1/22 and 1/44 gr. ergamine.

acid previously with Ewald and alcohol tests. One case showed achlorhydria on one Ewald and very low acid on two alcohol tests, then normal acid on two histamine tests. After-

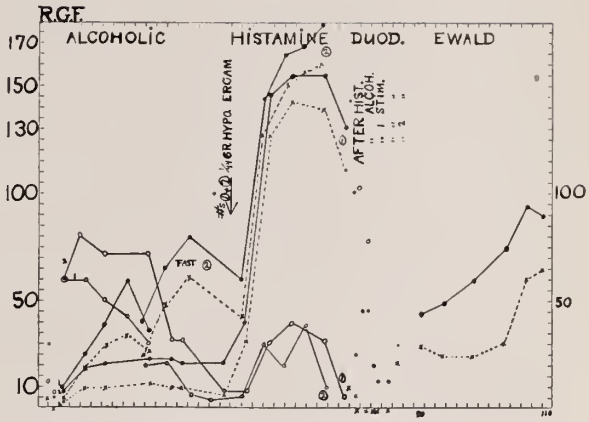


Slow response. Alc. weakest stimulus. Importance of time. Diag.—acne, chlorosis, hypoacidity.

wards one alcohol test was normal and two Ewald tests showed hyperacidity.

Both the histamine and alcohol tests inform as to the secretory ability of the stomach. Alcohol as used seemed to be a weaker stimulus than bread (H. M.) The Ewald test is least informative and least beneficial therapeutically and least applicable to histamine or duodenal stimulation on the same intubation.

Table No. 7 gives comparisons of the effects from different doses of histamine. Taking the average in 100 histamine tests, the highest free hydrochloric acid was reached in thirty-seven minutes and was 66 per cent. At this time the total acid was 80 per cent. The free and total acidities reached their highest



High acid after histamine. Local skin reaction very marked. Alcohol and histamine on same intubation. Slow emptying. Alcohol weakest stimulus. Fasting contents hyperacid. Diag.—diabetes, paresis, pansinusitis, bile tract trouble.

Table No. 7.—Histamine

	Acid								Secretion							
									Highest							
	Free	Total	Time obtd. in mins.					C.C. Total	10 Mins.		Time obtd. in mins.				Time Stud.
			0–19	20–39	40–59	60+	Aver.		Aver.	Most	0–19	20–39	40–59	60+	
All Doses															
100	66	80	7	31	48	14	37	79	15	28	14	51	27	8	59
**20	0	11	8	7	1	4	23	23	4	15	11	6	1	2	60
Ergamine Gr. 1/44															
63	72	92	5	19	31	8	42	73	13	32	7	33	18	5	58
*53	84	97	1	15	31	6	40	81	15	37	2	29	17	5	57
**10	0	8?	3	4	1	2	23	15	4	4	6	2	1	1	56
Ergamine Gr. 1/22															
20	59	75	2	6	9	3	39	76	12	27	4	12	2	2	59
*14	86	98	0	3	9	2	40	94	16	32	1	8	3	2	57
**6	0	11	2	3	0	1	20	23	3	9	5	1	0	0	53
Histamine m i i i (1 to 500)															
3	0	10	1	1	0	1	34	11	4	6	1	2	0	0	34
Imido ½ c. c.															
3	74	86	0	1	2	0	36	82	13	29	1	1	2	0	62

*Excluding Achylias.
**Only Achylias.
?Would be 6 if exclude one case with T. A. 42 which later showed free HCl after gr. 1/22 Ergamine (H. M.).

percentage usually synchronously. The average time of study was fifty-nine minutes and the average amount of secretion was 79 c.c. or for ten minute interval 15 c.c.[6] The highest acid titrated after histamine stimulation was free 160 and total 180 which was fifty minutes after the injection of ergamine gr. 1/44. Another test on the same subject and with the same dose gave free acid 144 and total 155 in thirty minutes. In this case (R. G. F.) the secretion averaged for ten minute intervals 22 and 25 c.c. in the first and second test respectively.

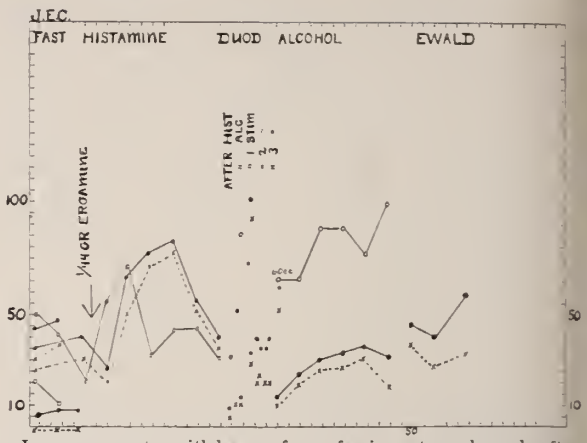
The greatest total amount of secretion obtained was 265 c.c. in sixty-five minutes (J. E. C.) The most secretion obtained in any ten minute interval was 120 c.c. and in the succeeding ten minutes 90 c.c. was extracted.[6] The most secretion occurred usually before the highest acidity. There is a more rapid influence upon secretion after the larger doses of histamine than upon acidity. The amount of secretion in achylia cases was always small. It was greatest in the early intervals, whereas, the highest acid came later.

Increase in pulse rate and diminution in blood pressure after histamine injections are shown in Table No. 8. There are illustrative cases and a summary given. The diastolic pressure seems to be influenced more than the systolic.

Two or more Ewald tests were done on each of forty-two patients. Classified according to the free acid, there was disagreement in twenty (48 per cent) of these.

Two or more alcohol tests were done on each of thirty-six patients. There was disagreement in nine (25 per cent).

Two or more histamine tests were done on each of fourteen patients. There was no disagreement in these.



Large amounts withdrawn from fasting stomach and after histamine and alcohol. Duodenum always acid showing highest free and total. Diag.—diseased tonsils, sinusitis, bronchitis, enteroptosis.

TABLE No. 8.—PULSE AND BLOOD PRESSURE AFTER HISTAMINE
Illustrated Cases

Case	Dose	Before	After (mins.)							
			2	5	10	25	30	40	50	60
M. L.	1/150	Pulse 80	.....	86	.....	88	84	.....	.....	.....
		Systol 105	.....	105	.....	100	105	.....	.....	.....
		Diastol 70	.....	60	.....	60	65	.....	.....	.....
M. W.	1/88	Pulse 94	96	.....	96	.....	104	90	.....	.....
		Systol 158	145	.....	145	.....	165	145	.....	.....
		Diastol 90	70	.....	70	.....	85	65	.....	.....
R. L. M.	1/44	Pulse 90	92	.....	88	80	84	.....	.....	.....
		Systol 220	210	.....	200	190	210	.....	.....	.....
		Diastol 115	110	.....	105	115	118	.....	.....	.....
O. M. J.	1/44	Pulse 78	104	.....	110	90	.....	86	78	.....
		Systol 120	85	.....	80	100	.....	105	115	.....
		Diastol 80	75	.....	65	75	.....	100	80	.....
L. C. L.	1/44	Pulse 70	76	.....	82	68	.....	62	62	66
		Systol 122	90	.....	100	105	.....	100	100	100
		Diastol 75	65	.....	65	65	.....	65	65	70
J. E. B.	1/22	Pulse 96	94	.....	120	140	135	130	104	90
		Systol 115	120	.....	115	115	120	120	115	110
		Diastol 70	70	.....	65	65	55	55	65	70
H. V. W.	1/22	Pulse 96	98	.....	90	90	96	90	.....	88
		Systol 130	105	.....	95	105	105	105	.....	105
		Diastol 75	70	.....	60	65	75	75	.....	70
T. N.	1/22	Pulse 77	84	.....	90	80	64	68	66	66
		Systol 150	140	.....	110	110	120	135	135	135
		Diastol 80	70	.....	55	60	65	65	70	70
R. M. P.	½ CC Imido	Pulse 62	60	78	62	60	58	.....	.....	.....
		Systol 120	105	105	105	120	118	.....	.....	.....
		Diastol 80	70	68	70	75	75	.....	.....	.....

Average all cases

	Pulse increase Per min.	Pressure fall Systol.	Pressure fall Diastol.
Ergamine grain 1/22	22	19	27
" " 1/44	15	17	14
" " 1/88	7	5	15
" " 1/150	5	0	0

TABLE No. 9

E 2 or more	42	Disagree	HCl higher in E	101
A 2 or more	36		HCl higher in A	38
H 2 or more	14		HCl same	17
E & A	156		Hyper in both	29
		20=48%	Hypo in both	26
		9=25%	Normal in both	22
		0	Absent in both	12
		70=45%	Hyper in E, Normal in A	28
			Normal in E, Hypo in A	23

	Bile F	Bile D	Bile F & D			Free HCl F & D	Free HCl F	Free HCl D	
Present.....	156	259	99	D, F } 170	F, D } 45	171	F, D } 112	D, F } 80	
Absent.....	422	279	236			203			

Highest *HCl in F		9
" " " D		2
" " " "	stim.	26
" " " "	c no "	5
" " " "	" 1 "	20
" " " "	" 2 "	6
" " " "	"Alc. "	15
" " " "	" E "	3
" " " "	" H "	3
" " " "	1st Int	12
" " " "	2nd "	6
" " " "	3rd "	3
" " " "	4th "	3
" " " "	6th "	1
" " " "	11th "	1
" " " " Subsequent to	1 E	2
" " " " "	" 1 A	4
" " " " "	" 1 E & 1 A	4
" " " " "	" 1 E & 1 A & 1 H	4
" " " " "	" 1 E & 2 A & 1 H	1
" " " " "	" 2 E & 2 A	1
" " " " "	" 3 E & 3 A & 1 H	1
" " " " "	" 2 E & 3 A & 1 H	1

E=Ewald; A=Alcohol; H=Histamine; F=Fasting stomach; D=Duodenum; S=Stomach; Stim.=Stimulation, Int.=intubation.
*Highest free acid titration in S. or D. after E. or A. or in F.

Both the Ewald and alcohol tests were done on each of 156 patients. Of these seventy-seven agreed and seventy (45 per cent) disagreed. In nine cases there was agreement at one time and disagreement at another. Free acid was higher with Ewald in 101, in the alcohol in thirty-eight, and about the same in seventeen. In both tests there was hyperacidity in twenty-nine, hypoacidity in twenty-six, normal in twenty-two, and absent acid in twelve. There was hyperacidity with the Ewald and normal acid with the alcohol test in twenty-eight cases. The acid was normal with the Ewald and subacid with the alcohol test in twenty-three cases. There were eight other combinations.

Bile was obtained macroscopically from the fasting stomach in 156 intubations and was not seen in 422.[7] It was present at one time and absent at another on the same subject in fifty-four instances. Bile was noted in duodenal extractions, no stimulus having been given, in 259 tests and was not seen in 279. There was no bile in fasting stomach and unstimulated duodenum in 236 instances, and present in both in ninety-nine instances. In 170 intubations there was bile in the unstimulated duodenum but none in the stomach. In forty-five tests bile was plainly visible in the gastric but not seen in the unstimulated duodenal extractions.

Free acid was absent in both the fasting stomach and unstimulated duodenum in 203, present in both in 171, present in stomach but absent in duodenum in 112, and absent in stomach but present in the duodenum in eighty instances.[8]

In nine cases their highest acidity was in the fasting stomach. The unstimulated duodenal acidity in two cases was higher than the gastric acidity after both the Ewald and alcohol tests.

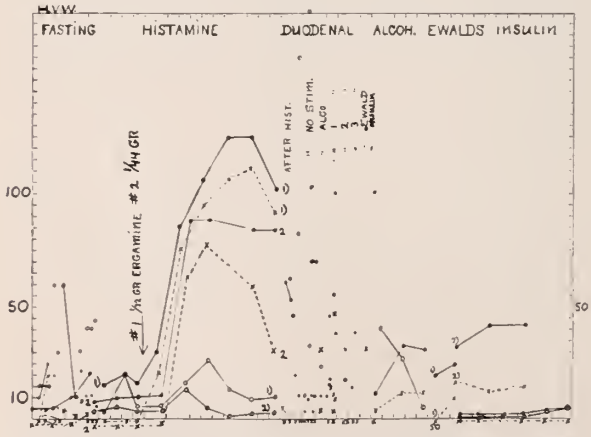
After one or more duodenal stimulations with magnesium sulphate solution and after the cessation of the bile flow, extractions from the duodenum showed the highest acidity, excepting after the histamine stimulation, in twenty-six cases. Repeated intubations and stimulations may have influenced this. Five of the twenty-six received no gastric stimulation on the intubation that gave the highest acidity after one (twenty cases) or two (six cases) duodenal stimulations. Fifteen had an alcohol test on this same intubation, three an Ewald and three a histamine. The highest acid occurring in the stimulated duodenum was on the first intubation in twelve instances, on the second in six, on the third in three, on the fourth in three, on the sixth in one, and on the eleventh in one. It occurred on an intubation subsequent to one Ewald twice, one alcohol four times, one Ewald and one alcohol four times, one Ewald one alcohol and one histamine four times, one Ewald two alcohol and one histamine once, two Ewald and two alcohol once, three Ewald three alcohol and one histamine once, and two Ewald, three alcohol and one histamine once.

Four of the twenty-six cases, showing highest acidity in the duodenum, had received histamine. Two of the highest acidities occurred on the first duodenal intubation. Repeated intubations on many patients have failed to produce an increased acidity. They are believed to have a tendency to do so in some cases. This also applies to histamine injections. There has never been any indication of harmful effects objectively or subjectively.

This tendency to high acid in the duodenum on intubations subsequent to one or more in which histamine was used is illustrated by a case of diabetes (H. V. W.) The gastric acid was normal with histamine and the duodenal contents alkaline. One week later with no gastric stimulant and after bile ceased following magnesium sulphate instillation, the duodenal acidity was fifty-five free and sixty-five total. On several previous intubations the duodenal extractions had not been acid.

The metal tip of the tube may act as a stimulus to acid secretion in certain fasting stomachs as exemplified in some of the graphs and in Table No. 10. This characterizes an exceptional type.

Repeated intubations are an influence in increasing gastric acidity. There is also a tendency to higher acidity on intubations subsequent to histamine tests. One case (M. W.



Hypoacid with alcohol and Ewald. Normal response in acid with histamine but poor in secretion. No free HCl after insulin units 20. Diag.—oral sepsis, diabetes, pyelocytitis.

Table No. 10.—Increasing Acid in Fasting Stomach

Free	Total	Secretion (c.c.)	Time (mins.)	Case	Preceded by
0	10	30	0		
12	26	55	10		
26	37	50	20	T. T.	1 Ewald
35	48	50	35		
70	80	8	40		
15	26	38	0		
14	24	35	10	J. P. F.	1 Ewald
40	50	20	15		
50	54	10	20		
0	15	5	0		
0	15	2	10	F. J.	1 E & 1 Alc.
20	30	10	20		
15	30	2	0		
65	80	5	10	F. J.	1 E & 1 Alc. & 1 Hist.
70	90	5	25		
30	35	18	0		
20	30	12	10	S. J. H.	1 E., 1 A. & 2 intubations-all hyperacid
57	67	100	20		
70	77	14	25		
0	17	17	0		
0	14	7	10	J. W.	2 E. 1 A. & 8 intubations
8	22	13	20		
8	28	8	30		
0	5	5	0		
10	22	7	10	C. D.	.....
32	45	40	15		
0	5	2	0		
0	25	40	10		
5	25	20	20	L. J. L.	2 E., 1. A. & 2 H.
12	27	25	30		
0	10	5	35		
15	26	38	0		
14	24	35	10	J. P. F.	1 E.
40	50	20	15		
50	54	10	20		

Table No. 10.—Increasing Acid in Fasting Stomach

Free	Total	Secretion (c.c.)	Time (mins.)	Case	Preceded by
0	5	2	0		
0	5	1	10		
0	5	2	20	H. L. S.	.....
40	45	10	25		
20	35	2	30		
22	42	2	45		
0	10	5	0		
25	30	5	10	C. L. L.	1 E. & 1 A.
50	55	30	15		
56	60	10	20		
0	10	6	0		
20	48	20	10	J. A. L.	1 E. & 1 A.
0	12	3	20		

W.) had no acid on two fractional Ewald tests and then showed normal acidity, four other intubations without any gastric stimulation having been received in the interim.

Tables Nos. 11 and 12[9] show that normal and increased gastric acidity usually occur between twenty and fifty years of age and achlorhydria between sixty to seventy.[10]

By the fractional Ewald test alone achlorhydria was found in 6 2/3 per cent, by both Ewald and alcohol in 6 1/3 per cent, and by all three tests in 11 1/3 per cent instances. The high rate in the last group was due to the fact that cases were frequently selected.

Figures in parentheses represent those which showed an abnormal increase in the number of leucocytes in the duodenal contents, graded one to four.

The greatest number of these microscopically abnormal cases (thirteen of twenty) occurred in the hyperacid group of decade forty to fifty, whereas the greatest percentage was in the decades seventy to eighty. The greatest percentage of such cases fell in the hypoacid and hyperacid groups.[11]

It is concluded that one test is insufficient to know fully the gastric secretory ability. The alcohol gastric test is preferred. It is best adapted to subsequent histamine stimulation and duodenal drainage on the same intubation. Gastric and duodenal secretions are very variable. Erroneous interpretations of our laboratory findings are easily made. A study of the duodenal and biliary tract contents should be made on the same intubation with the gastric test in the majority of gastro-duodeno-biliary derangements. This may be done with the

Table No. 11.—Age Incidence

Decade	No. Cases	Acidity				
		Normal	Hyper.	Hypo.	Achlor.	
10–20	22	5.....	5.....	4.....	0 (E) Ewald	
		0.....	5.....	0.....	0 (E&A) Ewald & Alc.	
		1.....	0.....	2.....	0 (EA&H) Ewald & Alc. Hist.	
–30	127	41.....	27.....	13.....	2 E	
		14 (5).....	11 (3).....	7 (3).....	0 E & A.	
		5 (2).....	4 (2).....	3 (2).....	0 E A & H	
–40	114	24.....	25.....	9 (1).....	3 E	
		18 (5).....	16 (4).....	6 (4).....	0 E & A	
		7 (5).....	6 (4).....	0.....	0 E A & H	
–50	92	14.....	12.....	11.....	2 E	
		2.....	20 (13-70%)..	7 (4).....	1 E & A	
		1 (1).....	14 (5).....	5 (1).....	3 (1) E A & H	
–60	75	10.....	6.....	11.....	3 E	
		10 (2).....	11 (5).....	5 (2).....	2 (1) E & A	
		5 (4).....	8 (4).....	0.....	4 (2) E A & H	
–70	44	4.....	7.....	0.....	7 E	
		4 (3).....	8 (4).....	2 (1).....	3 (1) E & A	
		1 (1).....	5 (3).....	2 (1).....	1 (1) E A & H	
						Total
–80	25	4.....	4.....	4.....	1 E	258
		0.....	4 (4).....	0.....	4 E & A	160
		0.....	0.....	1.....	3 (3) E & H	81
Total.....	499	170	198	92	39	

TABLE No. 12.—AGE INCIDENCE PER CENT (Approx.)

Decade	Cases	Acidity			
		Normal	Hyper.	Hypo.	Achlor.
10–20	22	27%	46%	27%	0%
–30	127	48	33	18	1
–40	114	45	40	12	3
–50	91	22	48	23	7
–60	75	31	34	22	13
–70	44	20	45	10	25
–80	25	16	32	20	32

	Under 40 years	Over 60 years
Achlorhydria	2%	28%
Hypoacid	16	13
Normal	45	19
Hyperacid	37	40

TABLE No. 13.—INCREASE OF LEUCOCYTES IN DUODENUM

Decade	No. Cases	WBC+++ or more	
		No. Cases	Per Cent
10–20	9	1	11
–30	47	17	36
–40	60	23	38
–50	56	25	45
–60	45	19	43
–70	27	15	55
–80	13	7	54
			41 Total Incidence
Normal Acid	80	31	38
Hyper. Acid	112	48	43
Hypo. Acid	44	18	41
Absent Acid	22	8	36

procedure as described, only one intubation being necessary. The relationship between the acid and alkali reactions in the stomach and duodenum is important.

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Professional Building.

THE MANAGEMENT OF INJURIES: SOME CAUTIONS.*

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In a former paper presented by me at these Clinics I have dealt with some of the principles of the management of patients that have suffered trauma, particularly those cases in which minor surgical and first-aid procedures will suffice. In this paper I shall call your attention to another group of patients,—those who have suffered injuries of such a character that hospitalization and major surgical procedures may be necessary. The procedures themselves will not be discussed because they do not come within the scope of this paper.

Not infrequently the general practitioner faces a difficult problem in deciding whether or not an injured person has a serious hurt. The initial shock may obscure important symptoms and signs or else the injury may seem so trivial that serious visceral or other injury may appear to be very unlikely. In some instances the decision may be rather difficult to make even after hospitalization and a period of observation of the patient.

In the short time available it will be possible to deal with only a few of the general principles involved and to discuss a few illustrative cases. To simplify the subject I shall consider injuries under a very general regional classification, as follows: 1. The extremities (exclusive of bones). 2. The cranium. 3. The spine. 4. The pelvis. 5. The chest. 6. The abdomen.

The Extremities. Certain injuries of the exmities are of such severity that the need of hospitalization for amputation or extensive repair is immediately obvious. Others seem so insignificant that little attention is paid to them and a simple dressing may be applied

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without examining the wound carefully. It is to this latter group that I would call your especial attention. It would be difficult to hazard even a guess as to the number of individuals that go through life with preventable deformities, particularly of the fingers, because of the failure to recognize severed tendons or nerves as the result of some apparently minor injury.

Every wound, no matter how trivial and unimportant it may seem, should be carefully cleansed and explored for retained foreign bodies and severed or injured tendons or nerves. Not infrequently the edges of wounds, especially those made by sharp objects, will adhere to each other quickly or be masked by clotted blood so that the depth of the wound will be misjudged and severed tendons and nerves may be overlooked easily. It is important, therefore, to employ the various active and passive motions and movements of the extremity to prove the continuity of tendons and motor nerves and to test the integrity of sensory paths by some such simple method as that of pricking the skin lightly with an ordinary pin.

If tendon or nerve injuries are present, usually the patient should be hospitalized so that a careful repair of the injured structures may be made under adequate anesthesia and with strict surgical technic. To delay in such cases means retraction of the severed ends, scarring and other conditions which may be difficult or impossible to rectify satisfactorily at a later time. In this group numerous illustrative cases might be cited but I shall not take the time.

The Cranium. Fortunately most cases suspected of or known to have cranial or intracranial injury are sent to a hospital at once. The first twenty-four hour period following such injuries is a crucial one and it is scarcely necessary to mention the importance of having such patients in a hospital where careful study with frequent observations of the pulse and the blood pressure and other indices of the intracranial pressure may be noted and where surgical intervention may be immediately available if necessary.

Mental disorientation, stupor or unconsciousness, a slow pulse rate, elevation of the blood pressure, occasionally a fall in the blood pres-

Fig. 1.—Roentgenogram of Skull (O. F. B.)

sure if shock is present to a marked degree. unequal pupils and unequal or otherwise abnormal reflexes are among the more common evidences of an increase in the intracranial pressure or of injury to the brain. Lumbar puncture furnishes valuable information but probably should be reserved for those patients in whom the symptoms and signs as enumerated above warrant hospitalization. Failure to hospitalize such patients promptly may entail serious consequences. The following case illustrates the point.

O. F. B., a white man, aged 42 years, was sent to the University of Virginia Hospital July 10, 1930, because of paralysis of the left side of the face and mental and temperamental changes. He had fallen from a wagon two months previously and struck his head. He had been unconscious for about three weeks after the accident. Examination revealed partial peripheral facial paralysis of the left side, right-sided hemianopsia, mental and emotional changes and urinary symptoms suggesting diabetes insipidus. Roentgenograms of the skull showed extensive old fractures with a depressed area in the occipital region (Figure 1).

This case is a typical instance of the late results of untreated fracture of the skull with depression of fragments. Many such cases have permanent paralyses, mental and temperamental changes and very frequently subsequent Jacksonian epileptiform seizures. The only way in which the incidence of such distressing sequelae can be reduced is by prompt hospitalization and appropriate treatment of depressed fractures and other serious cranial injuries.

The Spine. Injuries of the spine are often overlooked until the undue persistence of symptoms leads to thorough physical and roentgenographic examinations. Any person in whom a recent injury of the spine might have occurred should be handled and moved with the utmost caution in order to prevent compression or laceration of the spinal cord. Angulation or other deformity of the spine, the strength and equality of the reflexes, muscular strength and the normal sensitivity of the skin should be investigated. If there is any apparent abnormality, prompt and thorough roentgenographic studies should be made.

Especially the less extensive spinal injuries may be overlooked. At a recent clinic in Chicago, Chandler (Passavant Memorial Hospital—"Lumbo-sacral Abnormalities or Low Back Pain"—Fremont A. Chandler 4-2-30) presented several such cases. Often the injury had been an apparently trivial one. Persistence of pain in the lumbar or lumbo-sacral region simulating lumbago was the outstanding symptom. Roentgenograms revealed old fractures or dislocations of the lower vertebrae. Fusion operations were performed and usually were followed by very satisfactory results.

The Pelvis. Injuries to the pelvis may be easily missed, unless roentgenologic studies are made. F. S., an unmarried, white girl, aged 18 years, was brought to the hospital September 10, 1930, immediately following an automobile accident. She had suffered multiple bruises and minor lacerations. The most painful regions were the left hip, the left jaw and the right shoulder. No physical evidence of bony or other serious injury anywhere could be elicited. After the patient had recovered from the initial shock, roentgenograms were made and it was with some surprise that a fracture of the pelvis was found (Fig. 2). At no time was there any pain at the site of fracture.

Rest in bed was prescribed and the patient made an uneventful convalescence. Failure to recognize the condition might have been followed by serious consequences. The danger of encroachment upon the birth canal in young girls is obvious.

The more extensive fractures of the pelvis may cause damage to the bladder, urethra, rectum or sacral nerves by fragments of the bone. If the patient cannot void, a catheter should be passed. The passage of blood in the urine or by rectum usually indicates serious damage. Extravasation of urine into the tisues sometimes occurs and should be watched for carefully. Motor or sensory changes in the extremities may indicate pressure on or injury of the sacral nerves.

The Chest. A blow or crushing force applied to the chest may be followed by internal injuries, the extent of which is out of proportion to the external evidence of injury. One must be most cautious, therefore, to avoid the failure to recognize injuries of the heart and lungs when not even a fracture of the ribs may be apparent. N. J., an unmarried, colored girl, aged 21 years, was brought to the hospital September 2, 1928, immediately following an

Fig. 2.—Roentgenogram of Pelvis (F. S.)

automobile accident. She was somewhat dazed and restless and complained of pain in the epigastrium and over the lower part of the sternum. There were no cuts or abrasions and no other evidences of external violence. The temperature was 99.8°, the pulse rate 110 and the respirations 52 per minute. No gross evidence of any serious injury was elicited.

The patient's condition showed little change for several hours and it seemed that no cause for alarm existed. Less than ten hours after admission, however, the patient died suddenly. Post-mortem examination revealed an incomplete rupture of the heart (Fig. 3). The case is of particular interest because of the extensive internal injury without external evidence of any serious injury.

Cyanosis, the spitting of blood, respiratory difficulty and changes in the breath or heart sounds are signs, any one of which warrants immediate hospitalization and further investigation of the patient. Failure to heed them may be followed by serious immediate or late consequences.

Abdomen. One of the most difficult decisions which the practitioner may have to make is that regarding the seriousness of an abdominal injury. Unfortunately serious visceral damage may be caused by relatively insignificant trauma and, to further complicate matters, symptoms and signs of the injury may be greatly delayed in making their appearance. Many hours and sometimes even days may elapse before such cases come to the hospital.

In a recent paper Goodwin reviewed some cases of "Subcutaneous Injuries of Intra-Abdominal Organs by Blunt Force" at the University of Virginia Hospital. There were twenty-one cases of injury of the gastro-intestinal tract, six of the liver and three of the spleen. The type of trauma varied greatly. Some individuals had been hit in the abdomen with the fist, others kicked by horses or mules, some had merely fallen down, others had fallen from horses or wagons and several had been in automobile accidents. The time elapsing between the injury and admission to the hospital varied from a few minutes to as much as eight days. The mortality increased directly as the duration of the injury prior to hospitalization and operation increased. Goodwin concluded that "when there is any *suspicion* about a rupture of the intestine, liver or spleen the safest course is to explore." An

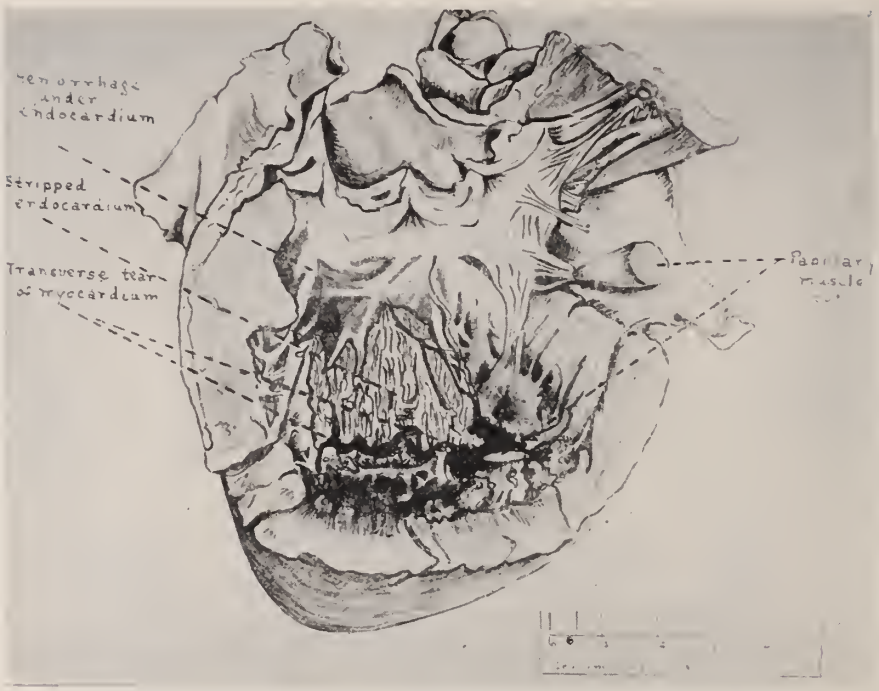

Fig. 3.—Ruptured Heart (N. J.)

occasional abdomen may be opened unnecessarily, but only in this way will the appalling mortality of these injuries be materially reduced. Abdominal tenderness, muscle spasm or rigidity and distention of the abdomen are all important danger signals.

I. H., an unmarried, white girl, aged 22 years, was brought to the hospital June 8, 1930, immediately following an automobile accident. There were extensive lacerations of the scalp and face and multiple bruises. The edges of the lacerations were excised and repaired in the usual manner. There was no evidence of intra-abdominal injury. The patient's temperature was 99.4° and the pulse rate 110 per minute. The following day she complained of abdominal pain and there was some rigidity of the abdominal muscles. The pulse rate was 138 and the temperature 101°. It was felt that an intra-abdominal injury, probably a rupture of the liver, was present and exploration was advised.

Under spinal anesthesia the abdomen was opened and a rupture of the liver with moderate hemorrhage was discovered. The tear was repaired and a blood transfusion given at once.

In this case the initial shock entirely masked the symptoms and signs of intra-abdominal injury, and it was not until twenty-four hours later that the symptoms appeared. Even at that time they were not conclusive and there was some difference of opinion among consultants who examined the patient.

W. J., a white boy, aged 18 years, was brought to the hospital September 15, 1929, immediately after having fallen from the running board of a moving automobile. He said that he had landed on his head as he struck the ground. Examination revealed some stupor, partly alcoholic (?), and generalized tenderness and rigidity of the abdomen. The temperature was 99°, the pulse rate 80, the systolic blood pressure 115, and the leucocytes numbered 23,000. Roentgenograms of the skull showed no fracture. Intra-abdominal injury was suspected and immediate exploration advised.

Operation revealed an extensive rupture of the spleen which necessitated splenectomy. There had been much loss of blood which was treated by intravenous infusions of saline solution and blood transfusion. The patient made an uneventful recovery.

Had operation been delayed it would have meant almost certainly the death of the patient, for, at the time of operation, the hemorrhage was arterial in origin and quite active.

J. E. U., a white boy, aged 8 years, was brought to the hospital fifteen hours after having tripped and fallen across a log, striking in

the upper abdominal region. Very little had been thought of the accident until three hours later when the child began to complain of pain in the epigastrium. Nausea and vomiting soon ensued but the family physician was not called until twelve hours after the accident. At the time of admission the general condition of the patient seemed good. The temperature, however, was 101°, the leucocytes numbered 22,000, and the pulse rate was 120 per minute. There was some abdominal distention with generalized rigidity. Immediate exploration of the abdomen was advised.

At operation a rupture of the third portion of the duodenum was discovered. The rent was about one and one-half inches long. It was repaired and the child made a satisfactory convalescence and recovery.

This case is of particular interest because of the relatively extensive visceral injury following a seemingly trivial accident. In spite of several hours delay the patient had the good fortune to recover.

Rupture of a kidney rightfully belongs to to the field of urology, yet many of these cases will be seen by the general surgeon. It is often impossible to decide definitely the exact nature of an intra-abdominal injury.

T. B., a colored boy, aged 11 years, was brought to the hospital March 1, 1930, three days after having been thrown from a horse against a pile of wood. There had been little or no complaint until the third day, at which time the abdomen had become distended and vomiting had occurred. Castor oil had been given but the bowels had not moved. Examination revealed distention and rigidity of the abdomen with elevation of the patient's temperature and leucocytes. There was some blood in the urine. Injury to the left kidney with possible intestinal injury was suspected and exploration advised.

Operation disclosed rupture of the left kidney with the extravasation of large quantities of blood in the mesocolon, the mesentery, and thence into the walls of the colon and stomach. The kidney was removed (Fig. 4) and an enterostomy tube placed in the small intestine because there seemed to be marked paralytic ileus. Convalescence was somewhat stormy but recovery eventually occurred.

In a necessarily very incomplete manner I have attempted to call your attention to some of our problems in the management of patients that have been injured. The most difficult problem is obviously that of diagnosis. In conclusion, may I not make the plea that all cases of trauma be considered serious until proven otherwise, and, furthermore, that all cases in which there is a suspicion of serious injury be hospitalized at the earliest possible moment.

Fig. 4.—Ruptured Kidney (T. B.)

ACUTE APPENDICITIS.*

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One of the most serious problems in the whole field of emergency surgery today is acute appendicitis. The disease is very common, and very deadly. It is responsible each year for the death of thousands of individuals, most of them in the prime of life, but sparing neither age, sex, nor social condition. Among these deaths are numbered, with disturbing frequency, individuals of a good deal of public prominence—favorite actors, bank presidents, members of the cabinet. Such people are surrounded by the best of medical attention; and this gives emphasis to the danger of the disease even under the best conditions, let alone the every-day conditions of general practice.

Yet death from appendicitis should be rather a rarity, instead of being, as it now is, a commonplace; for, when a death occurs from this disease, it means that somewhere along

*Read before the Seaboard Medical Association of Virginia and North Carolina at Suffolk, Va., December 1-3, 1931.

the line from patient to surgeon, and including both of them, something has gone wrong. The disease is almost never fatal if the offending organ is promptly removed. Appendicitis is, in the main, no doubt, diagnosed and treated well; but there is no question that the present death-rate is too high, and that, therefore, there are too many cases that do not receive adequate treatment early enough to save life.

A large number of deaths from appendicitis should be considered a reflection upon the efficiency of our methods of handling it, almost in the same way that a large number of deaths from typhoid or small-pox would be regarded; for the disease, while not preventable, is the most readily curable of any of our serious afflictions. Nothing is more gratifying and more certain than the patient's recovery from acute appendicitis, if it is treated promptly and early by operation.

Moreover, if death occurs, it is not ordinarily due to any special difficulty about the operation itself; it results simply from delay in performing it. It is, of course, peritonitis that kills; but we should not commonly be operating upon appendicitis in the stage of peritonitis; we should operate before perforation takes place.

This fact, that delay in operation is the major factor in the present death-rate, is quite generally known, as shown by current literature; but the reasons for such delay have not been so clearly analyzed. It may be that the patient himself is responsible, either failing to call his physician promptly, meantime taking a purgative, or declining to permit operation even when its vital necessity is clearly explained to him. If this is frequently the case, the only remedy is more thorough public education upon the subject, and, in passing, it is my own belief that such things should be briefly, but emphatically, taught in the public schools.

But let us suppose that the patient has called his doctor early in the illness, is willing to undergo operation if necessary, and there is a hospital within reach. Under these happy circumstances, is the problem of diagnosis always clear-cut to the physician, so that his duty lies plainly before him? Unfortunately, it often does not.

The attack may appear to be very mild, though it is known to be appendicitis; so that the physician is led to hope that it may subside without the necessity of emergency operation. Contributing to this thought may be the knowledge that the patient has passed through other similar attacks without much trouble, so that it may not seem appropriate to insist flatly on surgery.

And, finally, the disease may be obscure and difficult to recognize in its early stage. Right here I believe is a very important cause for the present trouble. The truth is that the symptoms are often very misleading, and the disease may treacherously conceal itself under the guise of something quite different.

Surgeons can rather easily lay some of the blame for delay, in their own private opinion, upon the family physician; for by the time the surgeon sees the case, it is usually easy enough to tell what is wrong, or at least that something serious is wrong; and he wonders why he was not called before. I wish at this point to say a word in defence of the general practitioner, for I am quite certain that if surgeons saw the patient as early as the family doctor sees him, they too would be misled, time and again, as to the diagnosis. I say this because for some years I was the surgeon of an industrial community, and my associates had instructions to let me see all abdominal cases early; so that I was personally responsible for any delay that occurred before operation. The difficulties of early diagnosis in some cases were in this way forcibly impressed upon me.

Following up the impression that I was not always finding easy sailing in my own diagnosis of acute appendicitis, I subjected to analysis 200 of my own personal operative cases, with especial reference to the problem. In ten cases, my notes were insufficient; in twenty-five cases, operation was done in the chronic or subacute stage; leaving 165 cases operated on for acute appendicitis, in which my personal notes were adequate.

Of this number, then, forty-six showed the appendix adherent or a little injected, but with no dangerous degree of inflammation; 119 showed severe inflammation; and of these, seventy-eight were gangrenous, perforated, or were complicated by some degree of peritonitis —that is to say, about half of the number diagnosed as acute.

Let me confine myself to the group of 119 cases of severe acute appendicitis, those simply adherent, or showing only a little injection, being eliminated from the discussion.

Difficulties in Diagnosis

In the first place, I found that the majority of cases of acute appendicitis were quite easy to diagnose, and indeed the patient often made his own diagnosis correctly. You are all perfectly well acquainted with the clinical picture, and I shall not go into it here.

I found that fifteen of this group, however, that is to say 12 per cent, had given me distinct trouble in diagnosis. Six of them were clearly enough appendicitis, but they seemed to be of a mild grade only, or clearly subsiding; whereas, at operation, gangrene or perforation was found.

The other nine were sufficiently confusing to delay my diagnosis for many hours, although I saw them repeatedly. In one case I was able to diagnose intestinal obstruction, and this proved to be due to an appendiceal abscess; in two others I could only perform exploratory laparotomy, the signs never becoming demonstrably localized. Two of the nine had suffered previous attacks of appendicitis; and in both cases the present attack bore no resemblance whatever to the others. Six of these nine were gangrenous.

Case I: Miss A., aged 17. Stomach-ache, beginning forty-eight hours ago, settled in the right lower abdomen, with vomiting at first. Had had previous similar attacks since childhood, usually lasting a day or two, sometimes a week. Examination showed considerable tenderness over the appendix, with perhaps slight spasm. However, her bowls had moved, nausea had disappeared, she had taken some liquid food with appetite, the eyes were bright, and she presented no appearance of illness.

Here there arose a very pertinent question, whether it would not be wiser to await the interval, since the process appeared to be subsiding. She was advised, however, that though all her previous attacks had gotten well, and this one seemed to be subsiding, yet safety lay in operation, and there was danger in delay, even to permit interval operation; for it was impossible to tell the condition of the appendix without seeing it, and it might well be about to rupture. Fortunately, the family made no objection, or I might have been persuaded to let her alone for a few hours observation. Immediate operation showed a completely gangrenous appendix. Here, therefore, improvement in symptoms coincided with gangrene; and the fact of previous similar recovered attacks did not mean a thing.

Case II: Mr. P., age 26. Abdominal pain for twenty-four hours, settling two hours ago in the right lower abdomen, with vomiting. One previous attack. Examination showed the abdomen not quite relaxed, and a little tender over the appendix, but this was certainly not pronounced. Temperature 97.4, pulse 76; patient did not look at all ill. Inflammation thought to be slight, but operation advised on general principles. Appendix found gangrenous for half an inch at the end.

Case III: Mr. H., age 39. History of attacks of "appendicitis" for eighteen months, with severe pain, lasting twenty-four hours, but not confined to bed; no vomiting. In the present illness, abdominal pain for forty-eight hours, gradually getting worse; mostly epigastric. No vomiting, bowels have moved. Seen by me twelve hours ago, and I found tenderness more especially to the upper left, and in the middle of the epigastrium. Stated that he had never had pain like this before; it bore no resemblance to his attacks of "appendicitis." It was impossible to lead him to admit increase of soreness near the appendix.

Twelve hours after admission, he felt better, but pain was beginning to localize, if anything, in the right side of the abdomen. Temperature normal, pulse 90. Six hours later, temperature 101, and to leading questions he admitted that there was maybe a little more tenderness over the appendix region than elsewhere. Operation showed the appendix deeply adherent in the pelvis, and wholly gangrenous.

I now think it is possible that I might have submitted this case to exploratory laparotomy on admission, in the present state of my knowledge; it occurred eight years ago, when I had not attained my present definite convictions on the subject; and, of course, hindsight is always better than fore-sight.

Case IV: Mr. H., aged 22. Abdominal pain for twenty-four hours, with nausea but no vomiting. Some tenderness of the lower abdomen, about symmetrical; Rovsing's sign referred either way; no spasm. Observation overnight; did not rest well, but no further nausea. Temperature 101. Some tenderness over left lower abdomen, none over the right. An hour later, some tenderness on both sides, about equal, and also in the upper abdomen. A little stiffening of the muscles on palpation, apparently mostly voluntary.

Enema given, good-sized bowel movement; but thereafter, marked increase in tenderness

over the abdomen. Immediate operation, appendicitis thought most likely as being the most frequent emergency condition. Appendiceal abscess was found, with beginning general peritonitis. In this case, again, I suppose that my present knowledge would have led me to operate earlier, in spite of lack of earlier localization—"hind-sight," again.

Comment: It appears, therefore, that severe appendicitis can be present when signs of localization are lacking, or when there appears to be only a mild or subsiding attack, or when the symptoms bear no resemblance to previous attacks in the same patient.

Analysis of Symptoms

Further analysis showed then that pain was absent, mild, improving, or unlocalized in twenty cases of a severe grade of appendicitis; that tenderness was mild or unlocalized in nine cases; that vomiting did not occur in twenty-nine cases, in twelve of which there was not even nausea; that spasm was not present in twenty-two cases, and that Rovsing's sign of pain over the appendix, upon pressure over the opposite side, was present in less than half the cases in which the point was noted.

Nevertheless, the detection of spasm or the Rovsing sign was of decided help when present, and in a few cases definitely helped to determine the necessity of operation. The same is true for the other collateral signs.

Carrying the analysis further, thirty-eight of the severe cases had no fever (nineteen being gangrenous), and twenty-seven of them had no rise in pulse (fifteen being gangrenous). It is none the less true that a considerable fever, 102 or 103, or a decidedly elevated pulse-rate, 120 or so, nearly always means a severe grade of inflammation, occurring in seventeen and twenty-six cases, respectively, only three such cases showing no inflammation. The same thing is true of a leukocyte count of 20,000 or above, though my incomplete records on this point show that severe inflammation can occur with little rise in the count; and by contrast, for example, a case that turned out to be apparently a simple alcoholic gastritis showed a leukocyte count of 54,000, with spasm that suggested perforation of an ulcer. Operation was urged, but refused; the patient immediately got well, and over a period of years has had no further trouble.

Also, unfortunately, severe pain, marked tenderness and spasm may be present where little actual trouble is disclosed at operation.

General Discussion of Symptoms

The familiar symptom of onset is, of course, pain. But the pain of appendicitis is not necessarily characteristic. It often resembles, rather, an ordinary stomach-ache, and the patient will often be able to assign a perfectly adequate cause for this, in having eaten a lot of canned fish, or stuffed himself with peanuts. He may not recognize his trouble as pain anyway; it is, to him, cramp-colic. It may not be referred to the right side for many hours, if, indeed, it localizes at all. It may be very mild, or improving, in the presence of gangrene; it may bear no resemblance to the pain of previous attacks; and, indeed, in one case of total gangrene, the only prominent symptom for many hours was vomiting, with diarrhea, there being only vague abdominal pain, and in the late stage some local protection and a trifle of tenderness. The appendix in this case was found wrapped completely in a mass of omentum, which I suppose accounted for the disguised symptoms; and it was wholly gangrenous.

It is a commonplace that sudden cessation of pain may coincide with gangrene; but it is not so generally emphasized that this cessation is not necessarily sudden, but may be gradual, the patient simply beginning to feel better. So that, in the absence of fever or rise in pulse, and with a perfectly tranquil expression of face, it is easy to be misled into thinking that his attack is recovering. Eight times in this group I was unsuspecting of gangrene, and only informed the patient as a matter of routine that it might be present, though his attack appeared to be getting better.

The pain of appendicitis may occasionally mimic other conditions, such as renal stone, as it did in two cases here. Finally, it must not be forgotten that the pain of appendicitis is not constant, but may vary from hour to hour; and it may unfortunately easily happen that the physician sees the case when there is no pain at all, so that the patient is sure he is recovering.

Tenderness: The most reliable sign of acute appendicitis is local tenderness, which is seldom absent. It is usually present even when pain is not at all localized; and its severity is in general a better indication of the severity of the process than any other symptom. How-

ever, it is certainly a good deal more typical in the late stage than it is earlier; it may not localize for many hours; and it may be trivial even when perforation has occurred. This is another example of the fact that the doctor who sees these cases early is confronted with much more difficulty in diagnosis than one seeing the case later on.

Case V: Mr. C., age 25. Pain in the middle of the epigastrium for twenty-four hours, with the feeling that the stomach was too full. Tenderness only in the epigastrium; denied any tenderness in the appendix region. Diagnosed acute gastric upset, and given medicine but not a laxative. Seen again after three hours, but he was not relieved. Palpation now revealed very marked tenderness in the epigastrium, so acute that ulcer was thought of, perhaps about to perforate. A few hours later, the same complaint; but careful palpation revealed definite tenderness over the appendix region. The patient stated, however, that when pressure was made there, the pain was in reality referred more to the epigastrium. No history of any previous digestive trouble nor of any attacks similar to the present. Operation showed the appendix enormously larger than normal, the size of collapsed small bowel, intensely distended and congested, with stasis of circulation in the distal third; imminent gangrene.

Comment: It is necessary to be suspicious of any stomach-ache not improving within a few hours, and to keep palpating for tenderness over the appendix.

Local tenderness will often be the guide to a correct diagnosis, when the other signs are far from typical, as in the following case:

Case VI: Mr. G., age 53. Onset twenty-four hours before admission with pain in the right testicle, which was sore on palpation and drawn up into the groin. Pain radiated upward, finally locating in the right lower abdomen, less marked in the flank. A little nausea, no vomiting. Uncomfortable feeling in the epigastrium, and felt as if too much gas in the right lower abdomen. The urine showed many red blood cells. Stated positively that this is his first attack of trouble; had never before had hematuria nor passed gravel, nor had indigestion.

Examination showed tenderness localized over the appendix, with a little voluntary protection but no spasm. Right testicle sore, not swollen; no tenderness over the kidney.

Discussion of this case emphasized the points that irritation of the testis and hematuria were not symptoms generally associated with appendicitis: but there was perfectly definite tenderness at McBurney's point. If this were an attack of appendicitis, it was a primary attack in middle life, and our experience had warned us that such attacks were apt to be severe, and sometimes confusing in symptoms. Emergency operation was, therefore, urged as the only safe procedure. It revealed a retrocecal appendix, constricted at the neck of the pocket in which it lay concealed, long, tense, thick and swollen, with edematous mucosa showing multiple petechiae—an acute obstructive appendicitis. Immediately after operation, all urinary symptoms disappeared, and during a year's further observation there was no recurrence.

Acute appendicitis is thus quite often a difficult disease to recognize in its early stage. I have no doubt that surgeons of very wide experience may attain a perfection of personal skill that enables them to estimate the severity of appendicitis with an unfailing approach to accuracy; but even the most expert, I doubt not, have their moments of uncertainty; and I am sure that, in general, the difficulties are such as to plainly account for some of the cases that come to operation too late—more is the pity—for it to be of benefit to them.

It has unfortunately been taught in the past that, unless some certain number—five or six—of the specific signs of the disease were to be found, and worse yet, that unless they appeared in a perfectly definite order, appendicitis could be eliminated. No doctrine could be more misleading nor more harmful; for there is no single symptom nor group of symptoms always present in anything like an early stage of the disease. Any one of them, in fact nearly all of them, may be lacking, and the patient may none the less have a gangrenous appendix, crying out to be removed in time to save his life.

The simple fact is this, that typical signs are late signs only, as they are in so many other ailments, and to wait until they all appear, in their order or out of order, is to allow the inflammation to progress until it may have reached a fatal severity. I cannot insist upon this point too strongly.

Particularly, I want to urge the fact that fever is never to be awaited. It is a late sign, not an early one. I have known one or two

physicians who would never consider their cases surgical unless they had fever, and therefore never referred them to me until the late stage, no matter how definite their pain and tenderness had been for hours, or a day or two. I have dreaded to see their cases come in, for I always knew they would be bad ones.

I cannot, therefore, avoid the studied opinion that there is only one safe rule to be followed when there is any reasonable idea that acute appendicitis may be present; it is relatively safe to operate; it is dangerous to delay. The burden of responsibility cannot help but rest upon the one who votes to delay.

It is true that by waiting some hours, the diagnosis of an obscure case will probably clear itself up, and everyone may then know that the patient has appendicitis; but that is no time to operate upon the disease. It must be done early, not late, if the death-rate is to be lowered.

Having gone thus far, I shall now find it necessary to look at the opposite side of the picture. Have not the writings and the teachings of many good physicians and surgeons urged, time and again, that operations should not be done for appendicitis when something else is really wrong instead? Is it not a fact that other things, not surgical, give similar signs, and that unnecessary operations have been done, to the patient's detriment, or at least without benefiting him? Is it not, therefore, better to wait and be sure of one's ground before operating?

At first sight, one would certainly agree with this position. But further analysis cannot help but show, first, that most of the things that are to be confused with acute appendicitis are themselves surgical conditions. They vary from ectopic pregnancy to perforated ulcer and tumors with twisted pedicle. Here operation is indicated anyway, as urgently as in appendicitis itself.

However, cholecysitits can be mistaken for acute appendicitis, and the same is true of tubal inflammation, which can occur without vaginal tenderness. Both of these conditions, I am well aware, are better operated upon in the chronic stage. Further, urinary stone, and in children even pneumonia, may occasionally be mistaken for appendicitis. It is certainly cause for chagrin if operation is done in such a case; and I speak from experience, for I have been compelled to explore a child with a perfectly evident pneumonia, which I had confirmed by X-ray, because his abdominal symptoms were so severe that I could not take the chance of his having a perforated appendix as well. He had no appendicitis, and while he recovered without any trouble, I was certainly sorry to have opened his abdomen unnecessarily.

The penalty for operating where no acute surgical condition is present, then, is chagrin, and inconvenience to the patient, and no benefit to him, and it is certainly regrettable. But what about the penalty for failing to operate when severe appendicitis is really present? You are all aware what the penalty too often is: it is death. This is never to be forgotten.

Conclusion

Acute appendicitis is by far and away the most common abdominal emergency; it is rather often a difficult disease to recognize in its early stage; and, if it is allowed to progress, it may reach a fatal severity in spite of any form of treatment, at the hands of the most expert.

There is then only one safe rule to be followed: in any case of acute abdominal trouble that fails to subside after four or five hours treatment by rest in bed and abstinence from food, acute appendicitis is to be suspected. An enema may be given, but no laxatives, for these make the matter worse: and no opiates, for they conceal the very symptoms on which we are depending to help us in diagnosis. And, in my own opinion, even the ice-bag is better left off, for it has more than once concealed the process just about as effectively as an opiate.

Earlier in this paper, I spoke a word for the family physician. Now let me speak one for the surgeon. It is he who must shoulder the responsbility for the patient's recovery, if it is appendicitis. Therefore, he is to be called early if there is any reason to suspect the disease. I realize that the family doctor cannot call a surgeon every time someone has a stomach-ache; but where there is doubt, the only safety for the patient lies in calling the surgeon early.

This paper is not concerned at all with treatment in the later stage, after a couple of days have gone by, the advisability of the Ochsner regime, and so forth. The fact I wish to emphasize is simply this: the cases should not be coming to the surgeon in the late stage;

they should come early; for it is only by early operation that the present mortality can be lowered.

There is no medical stage in the treatment of acute appendicitis; it is urgently surgical from the first moment.

And when seen by the surgeon, nothing should be allowed for a moment to interfere with the immediate performance of the operation if it is indicated. Neither the patient's eminence, nor the apparent or real importance of his immediate business affairs, nor the prejudice or importunities of his relatives, no matter what their social prominence, nor any other extraneous circumstance, must have the slightest influence upon the decision as to treatment. There is only one imperative consideration: get the appendix out as quickly as possible, while there is yet time. Gangrene or perforation can occur within twelve hours, and commonly does occur within twenty-four. Procrastination too often has meant death. Waiting overnight for the sake of convenience, or in the hope of the attack subsiding, has too often sealed the patient's doom. Acute appendicitis is an emergency of the utmost urgency, and life itself hangs in the balance.

Summary

Acute appendicitis is common and deadly; but it does not kill if recognized early and is promptly treated by operation. Many cases can be recognized at once; but others present much difficulty, and in them typical signs are late signs only.

It is obviously impossible to foretell the precise situation of the appendix as regards constricting adhesions, fecoliths, the adequacy of its circulation, and so forth, until it is actually seen; and these matters are vital to the patient, so that he is always in peril of greater or less degree until the operation is performed.

It is never permissible to take chances where there is any reasonable suspicion that the patient's affliction is acute appendicitis, for the disease is too deadly; and the physician should never sanction the fatal risk of delay.

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COMMON CHRONIC INFECTIONS OF THE VAGINA AND CERVIX.*

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It is hard to separate chronic infections of the vagina from those of the cervix. A long standing pathology of one usually means a pathology of the other. Whether more severe in the vagina or in the cervix will depend upon the kind of infection and other circumstances of the particular case.

Acute infections of the vagina and cervix will not be considered except to appreciate the fact that the acute is followed by the chronic. It is not necessary to mention the fact that a prevention or a cure of the acute will take care of the chronic. In a chronic case it is not what should have been done in the acute stage but what to do now.

Of the chronic infections of the vagina and cervix this discussion will only take up the more common. In short, it will bring before us that kind of a case you see so often, a woman of childbearing age or just past that period, who for sometime has had one or more local signs of chronic infection of the vagina and cervix, such as leucorrhea, altered menstruation, blood stained discharge, signs of pelvic disorder and possibly pain, irritability and disorder of the bowels and bladder, lacerations, erosions, uterine displacements, and systemic signs of localized infection. Of these leucorrhea is practically always present. Any suggestion as to successful treatment will be worth while.

The normal vaginal secretion is a pale blue liquid. It is acid in reaction. This acidity of reaction is a natural protective agent in the vagina against infection. The normal secretion of the cervix is a colorless liquid. This is contrary to the general impression. The normal secretion of the uterus is very small in quantity and is also colorless. The normal white albumen colored secretion which is often seen in the external os and in the vagina is caused by the cervical and uterine secretions coming in contact with the acid secretion of the vagina.

Most trouble in the vagina and cervix occur during the childbearing period, except the vulvo-vaginitis of children and senile vaginitis of older women. Acute vaginitis and cervicitis are usually caused by some form of bacteria or other parasitic organism. Practically every form of such bacteria or parasitic organism has been found in the vagina or cervix. These organisms more easily gain entrance into the tissue through trauma, such as labor, coitus, use of pessaries, and other accidents which cause lacerations, irritation, or an abrasion of

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the mucous lining. The lessening of the acid reaction of the vagina during menstruation makes infection more easily developed at that time. Also acute infectious diseases and chronic diseases of the heart and kidneys lower the body resistance and are contributory factors.

Those cases of acute vaginitis and cervicitis which are not treated and those which fail to respond to such treatment go into a chronic condition. The organism causing the infection in the acute stage may in the chronic state disappear and others take its place. This is notably true of the gonococci. The inflamed parts of the vagina and cervix are susceptible to other forms of bacteria and consequently most chronic cases develop a mixed infection.

C. J. Miller says that in chronic cervicitis the gonococcus, although hard to find, is the most common and the streptococcus, staphylococcus, and colon bacillus are the next in order of frequency. If the cervix is infected, the vagina will be so sooner or later. The reverse of this, however, is not always true. The trichomonas vaginalis attacks the vaginal and cervical mucous membrane but rarely invades the endocervix. In 600 pregnant women examined Bland found this organism present in 22.7 per cent. The exact relative proportion of all these infections cannot well be determined, and it is not necessary. Although practically all kinds of organisms may invade the cervix and vagina, it is safe to say that the gonococcus, streptococcus, staphylococcus, colon bacillus, trichomonas vaginalis, either singly or mixed, are the offending organisms in the more common of the chronic infections of these parts.

In addition to the symptomatology, a microscopical examination of the discharge in chronic conditions of the vagina and cervix is necessary for an accurate diagnosis.

On account of its disagreeable symptomatology and frequency, the infection caused by the trichomonas vaginalis deserves special mention. Here we have a free leucorrhea which is thick, yellowish, offensive, irritating and contains gas bubbles. Examination of the vagina will reveal inflamed punctate granules of the vaginal fornices and cervical mucous membrane. It has a salt and pepper appearance. The diagnosis can be confirmed by the use of the microscope. These parasites under the microscope are oblong or pear-shaped, when swimming freely in a liquid medium. The form may be changed if they come in contact with solids on the slide. The main point in this treatment is to recognize the fact that the endocervix is not infected. Bland reports a case where the cervix had almost been destroyed by previous cauterization when the infection was a trichomonas infection of the vaginal mucous membrane and not an infection of the endocervix.

Before beginning treatment of chronic vaginitis and cervicitis the nature and extent of infection should be ascertained. If the infection involves the pelvis or is caused by syphilis, tuberculosis, or malignancy, these conditions should receive first attention.

Treatment of chronic infection of the vagina and cervix itself should have two objects, one to remove or correct the primary causative or contributive factor, such as lacerations, displacements and organic diseases, the other to eradicate the infection and the pathology caused by it.

The general health of the patient, especially organic diseases, should be given proper attention from the time the patient comes under the care of the physician until discharge. Lacerations, displacements, and other like conditions, if of sufficient severity to interfere with proper function, should be corrected surgically. The choice of time for corrective surgery is best determined in each individual case, although it is the general rule to make an effort first to get rid of as much infection as possible. If gonococci are present, these should be eradicated before attempting surgery.

In treating the infection, the numerous methods used can be grouped under one general plan.

One step under this plan is the effort directed toward the infection of the vaginal and cervical mucous membrane. This embraces cleanliness, sterile and antiseptic douches and various medical agents used by local applications or on tampons. The antiseptic preparations used in the douches are almost household names and need not be enumerated here. The various local medicinal agents include silver nitrate, organic silver preparations, mercurochrome, acroflavine, and others of like nature. As an astringent, 1 per cent picric acid, 10 per cent tannic acid, ½ of 1 per cent zinc sulphate are at times indicated. No matter what chemical medication is used, it is necessary to

cleanse the vagina thoroughly and apply the treatment to every part of the vaginal mucous membrane. This is especially difficult in infection of trichomonas vaginalis. In this condition scrubbing may have to be used to remove the accumulation on the mucous membrane. Verrucae and ulcerated surfaces should be given routine treatment, although these conditions will improve after the infection has been eradicated.

The other step under the plan is to get rid of infection which is located in the endocervix. Infection is more difficult to control in the cervix than in the vagina because the infection is harder to reach, drainage more obstructed, and the glandular structure deeper.

The treatment of chronic infection of the cervix may be divided into a number of methods. One or more methods may be used. Of these, operative measures or thermo-cauterization should not be used if gonococci are still present.

Chemical Medication: The treatment of chronic cervicitis by chemical medication should be given at the same time treatment is given the vaginal and cervical mucous membrane. Remove the muco-purulent secretions in the external os, if present, with a saturated solution of sodium bicarbonate or 10 per cent solution of silver nitrate. Introduce a small dilator into the cervix which causes access to the cervical canal and establishes drainage. The same local medicinal agents employed in the vagina may be used on pledgets of cotton into the cervical canal and on tampons.

Diathermy: The success of diathermy is based on the fact that the current raises the temperature of the cervix as much as 47 degrees Centigrade and gonococci can be destroyed at a temperature of 40 to 41 degrees. Usually ½ to 1 ampere of current is used and the treatment averages about ten minutes and is given every three to five days. Diathermy has been used with considerable success in selected cases, especially in the hands of those who are conversant with its indication and technique.

Thermo Cauterization: This procedure was originated first by Hunner in 1906. It is especially beneficial in cases of infection of the deep tissues of the cervix, and in those with a small or moderate degree of laceration, erosion, or eversion. A small nasal cautery knife is best used for this purpose. Four to six linear cautery defects, about 4 or 5 millimeters in depth and as wide as the thickness of the knife, extending from well up into the cervical canal to the external os, are usually made. Erosion or eversion should be striped in the same manner. Nabothian follicle cysts are opened with the cautery. The treatment may be repeated in from four to six weeks if necessary. The chief post-operative danger is stenosis. This is best avoided by leaving unburned stripes of the endothelium between the lines of cauterization.

Sturmdorf Operation: This is a conical extirpation of the endocervix. In a modification of this method the extirpation is accomplished by the use of electro-coagulation or the cautery knife. The Sturmdorf operation is the most satisfactory way of eradicating a severe infection in the deep glands of the endocervix. It is best applicable to those cases without laceration.

Copper Ionization: Tovey has secured excellent results in the treatment of chronic cervicitis by copper ionization. A copper electrode is introduced into the cervix and the vagina is packed around it with cotton. A wet asbestos pad is placed under the buttocks. Ten to twelve milliamperes of galvanic current is used for a period of fifteen to twenty minutes. The positive pole is attached to the electrode and the negative pole to the asbestos pad. It is necessary to have the positive pole attached to the electrode as the negative pole has almost a dissimilar effect. Tovey says that 200 milliampere minutes will drive the copper into the cervical tissues to the depth of about eight millimeters. The milliampere minutes are arrived at by multiplying the amperage by the minutes the treatment is given. He says of the effect of this treatment; it contracts and hardens the tissue; dries discharges and coagulates the albumoids; it has a sedative effect; it decreases inflammation; it dehydrates the tissues; it is germicidal.

The treatment is given every ten days or two weeks. Tovey further states that "After a treatment, discharge lessens and disappears in a week or ten days. The cervix shrinks and, after three or four treatments, appears normal. The infection, erosions, nabothian cysts, and discharges also disappear."

The apparatus for this treatment can be purchased on the market at a moderate cost. We have used this treatment in twelve cases and

the results in eleven were excellent. The other case had a complicating prolapse and perineal laceration. Here the result was negligible and relief was finally obtained by a vaginal hysterectomy and perineorrhaphy. We have successfully used an apparatus made with practically no cost. The current is furnished by a used automobile battery which was given us by the garage man. This furnishes practically the current needed for this work. We made the electrodes by using large copper wires of different sizes for the different electrodes. The insulation was cut from the end the length of the cervix. A sheet of copper covered with a wet towel takes the place of the asbestos pad. Later, a set of electrodes was bought on the market. Except for the difficulty of sterilizing the insulated parts, we prefer the copper wire electrodes to the ones purchased on the market.

In conclusion, I would like to emphasize the point that the successful treatment of chronic vaginitis and cervicitis depends more on its thoroughness and technique than upon the choice of any particular method. For that reason all or a part of the details of the treatment cannot be left to the nurse. The best success can only be secured when the treatment is thoroughly and well administered, and the result of each step determined by the physician himself.

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DIAGNOSIS AND TREATMENT OF VASCULAR DISEASES OF THE EXTREMITIES—WITH SPECIAL REFERENCE TO THROMBO-ANGIITIS OBLITERANS.*

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Vascular diseases of the extremities include a large group of conditions, of which thrombo-angiitis obliterans, arteriosclerosis, and Raynaud's are most often seen in general practice. These diseases are often thought to be rare and the treatment of little value, but they are really common and if the diagnosis is made early the treatment is satisfactory in most cases. Early literature regarding spontaneous gangrene and allied complications of these vascular diseases is often confusing.

Quesnay, in 1739, hinted that organic occlusion of the arteries might cause gangrene and, in 1817, Heberden made it a definite statement. Dupytren and M. Roche proved this point and may well be called the father of the theory of arteritis. Virchow made valuable contributions on embolus and thrombosis. Behier, in 1861, stated that arterial and venous obliteration caused moist gangrene and arterial caused dry gangrene. Maurice Raynaud, in 1826, wrote his famous paper entitled, "Local Asphyxia and Symmetrical Gangrene of the Extremities." He tried to prove that there could be gangrene without arterial or venous pathology.

Friedlander, in 1876, invented the term, "arteritis obliterans," but this applied mostly to diseases of other tissues. Winiwarter, in 1879, used the term "endarteritis and endophlebitis," and described fairly accurately the pathology. Wivedensky, in 1898, called attention to the prevalence of arteritis obliterans in Russia and its most common occurrence in males. Buerger, in 1908, published his classical description of the disease. His work clarified the confusion of the previous fifty-five different names for this condition.

Etiology

The etiology of thrombo-angiitis obliterans is still obscure. It has a predilection for Jews, but has been reported in practically every race. The negro is probably more immune than any other single race. Siebert, Meyer, and many others think tobacco is the cause. Meyer says sufficient amounts of nicotine, pyridin, cyanic hydrogen, and carbon monoxide are present in tobacco to cause the disease. Brown, Meleney, Mueller, Koyano, and others report cases in persons who did not smoke. Other theories based on various changes in the blood are given by many as etiological factors, as well as typhus fever, syphilis, the bite of a fly and certain dietetic abnormalities. Buerger is probably right in believing it to be of an infectious or toxic nature. In an analysis of three hundred cases at the Mayo Clinic, they found tobacco smokers in 98 per cent of the

*From the Medical Department of St. Elizabeth's Hospital, Richmond, Va.

cases; infected tonsils in 75 per cent; periapical dental infection in 70 per cent; onset in cold weather in 68 per cent; Hebrews in 51 per cent; infected prostates in 49 per cent; syphilis in 3 per cent.

Raynaud's disease is practically confined to the female, though many cases in the male have been reported. In Monro's Monograph, in 1899, 62.6 per cent were in females. By improved diagnostic methods, many of these cases would now be correctly classed as vasomotor disturbances secondary to cervical ribs, peripheral neuritis, arteriosclerosis, scleroderma, or thrombo-angiitis obliterans. In the larger clinics today a diagnosis of Raynaud's disease in the male is always questioned. Heredity is a factor in 8 per cent of the cases, though many members of a family may show a subnormal vasomotor constitution. The age of the patient is generally between seventeen and thirty-five, with an average of thirty in most series.

Many factors are known to play an important part in the causation of arteriosclerosis, but its true cause is still unknown.

Pathology

One of the early changes in thrombo-angiitis obliterans is diffuse acute inflammation of the walls of the arteries and veins, with secondary thrombosis. There are seen erythrocytes, leukocytes, fibrin and giant cells. Purulent foci occur in the vessels. In the later stage, there is fibroblastic proliferation, organization, and later canalization, with marked periarterial "binding" which consists of excessive connective tissue around the vessels, binding them together. In arteriosclerosis, with thrombosis, the clot is acellular, and inflammatory reaction is absent. There are no giant cells, purulent foci, nor periarterial binding. There are atheromatous changes with deposits of calcium, cholesterol, and mucin.

Pathological changes are absent in the vasomotor types of vascular disease unless their end-result, gangrene in the severe types of Raynaud's, is considered. Altered physiology, however, is very easily observed in Raynaud's disease by changes of the nailfold capillaries. During the stage of pallor, few capillaries are visible; blood cannot be seen entering nor leaving, as there is a spastic segmented appearance of the capillary loops. During the stage of cyanosis blood enters from the arterioles, the capillaries dilate, become more numerous, and de-oxygenation increases with the increase of cyanosis. During the stage of rubor there is a rush of oxygenated blood from the arterioles due to the dilated capillaries. These changes are always in sequence and are important in the differential diagnosis, though their causes are not definitely known.

Symptoms

The symptomatology of Buerger's disease varies greatly with the type of the disease. Brown, Allen and Constam have designated thirteen clinical types as follows: 1, slow progressive; 2, absence of progression; 3, circulatory compensation; 4, acute fulmination; 5, extensive gangrene without rest pain; 6, venous involvement only; 7, normal pulsations in the usual palpable arteries; 8, vasomotor disturbances simulating Raynaud's disease; 9, association with arteriosclerosis; 10, absence of trophic disturbances; 11, severe rest pain; 12, absence of symptoms; 13, acute thrombosis. "Rest" pain means pain while the patient is at rest as contra-distinguished from claudication after exercise.

Most of their cases were treated for flat feet, rheumatism, and metatarsalgia, and some were treated for years before the diagnosis was made. A large group of cases have been operated upon for deep-seated infection of the feet and hands. There are acute cases with superficial phlebitis where the symptoms may have been absent before. Pain, archache, and later claudication are most often the first symptoms to occur. The others are color changes in the dependent position, cyanosis when elevated, coldness of the extremity as compared with the other parts of the body, thickened and brittle nails, hardening of the toe or finger tips, excessive cornification, small ulcerations under the nails which discharge serum and pus, trophic changes at the bases of the nails, severe type of rest pain, and, frequently, a characteristic posture such as sitting in bed holding the involved extremity. Edema often occurs in the affected part. Brown, Allen and Constam have analyzed the symptoms first to appear in three hundred cases as follows: Claudication in 50 per cent of the cases; fatigue in 15 per cent of the cases; cold extremities in 15 per cent; non-healing ulcers in 10 per cent; sudden arterial occlusion in 10 per cent; superficial phlebitis in 5 per cent; edema in 2 per cent; vasomotor disturbances in 2 per cent.

The symptomatology of arteriosclerosis is well known.

The signs and symptoms of Raynaud's disease may be confusing, since there are many vasomotor disturbances of the spastic type that simulate this condition. There are patients who have cold, moist, clammy extremities, and when exposed to varying degrees of temperature have blanching of symmetrical single digits of the extremities. Mueller classifies these cases as having a vasomotor, neurotic constitution. There is another group in which the above symptoms are exaggerated both in severity and duration, and in which there are numbness, partial anesthesia, coldness and pain during the stage of cyanosis. Heat produces redness of the extremity and a sensation of burning. The next group of cases consists of those showing the characteristic changes of Raynaud's disease. There is marked pallor, cyanosis and rubor in the order mentioned. These changes come on with very slight change of temperature, are more severe in every respect, and last longer. The exaggerated cases of this class develop symmetrical gangrene.

The symptomatology of erythromelalgia is seldom confused. The disease was first described by Weir Mitchell in 1878. It is characterized by acute, paroxysmal attacks of pain followed by increased heat, sweating, paresthesia, increase in arterial pulsations, dilatation and distention of the peripheral veins, redness and swelling of the part affected. The pain and other symptoms are greatly exaggerated by the dependent position of the extremity and are made less intense when the part is elevated, and practically disappear when put in cold water. The pain is most frequent in the ball of the foot or heel. The redness is usually bright or there may be a bluish tinge. Paresthesia is confined to the hyperemic area, as a general rule. There may be atrophy of the skin, blebs, and trophic changes of the nails, but gangrene rarely occurs.

Diagnosis

The differential diagnosis of the occlusive types of vascular diseases is of paramount importance so that treatment may be started early. Ninety per cent of these cases have diminished pulsations of the larger vessels to the extremity affected. A small group of cases have involvement of the terminal vessels, and still others have color changes before diminished pulsations are noticeable. Allen has described several diagnostic methods very helpful in these cases. If the ulnar artery is suspected, locate the radial arteries and compress both tightly. The hands are closed for one minute, then the patient's fingers are extended. If the arteries are normal, the pallor produced by the occlusion of the arteries quickly returns to a rubor stage and in a short time to normal. If the ulnar artery is occluded, the pallor remains for a much longer time. If there is involvement of the digital arteries, there will be excessive pallor after two minutes of elevation, and excessive rubor after two minutes of dependency. By placing the hand in cold water, ironing out the normal color, and cutting off the blood supply, these changes will be exaggerated. Normally, in occlusive lesions, there is an excessive stage of pallor, and a short stage of rubor. Irregular pallor with slow return to normal usually means occlusion distal to the digital artery which may be palpable.

In thrombo-angiitis obliterans, pulsation of the peripheral arteries is absent in 50 per cent of the cases, diminished in 45 per cent, normal in 5 per cent. There is excessive rubor with the limb hanging down and excessive pallor with elevation. Claudication is usually present, gangrene is common, and sharp, stinging rest pain may be very severe. The gangrenous ulcerations are moist and inflamed, and frequently discharge pus, especially under the nails. There is superficial phlebitis in about 30 per cent of the cases. The age of onset is usually between twenty-five and forty years of age, 98 per cent or more of the cases occurring in males. At least 50 per cent of all cases are in Jews. Roentgenological examination of the arteries does not usually show sclerosis. In about one-third of the cases there are color changes following exposure to cold. The temperature of the extremities is low and edema is common. Buerger's circulatory test is positive.

In arteriosclerosis, pulsation of the peripheral arteries is absent in 50 per cent of the cases, diminished in 45 per cent, normal in 5 per cent. There is excessive rubor with the limb hanging down and excessive pallor with elevation. Claudication is present, gangrene is common, and rest pain is usually mild and aching. The gangrenous ulcers are dry, and superficial phlebitis is rarely present. The age of onset is beyond fifty-five years of age, 90 per

cent of the cases occurring in males. It occurs in any race, particularly in Jews. Roentgenologic examination usually showed some sclerosis of the arteries, and there is color change in 15 per cent to 20 per cent of the cases. The temperature of the extremities is low and Buerger's circulatory test is positive.

Pulsation of the peripheral arteries is normal in Raynaud's disease. There is no excessive rubor with the limb hanging down and no excessive pallor with elevation. Gangrene is rare except in the most severe types. Rest pain is usually absent. The gangrenous ulcerations are always superficial and punched-out in appearance. There is no superficial phlebitis. The age of onset is between seventeen and thirty-five years of age, 95 per cent of the cases occurring in females. The disease occurs in any race. Roentgenologic examination gives a normal appearance of the arteries. There are always color changes when exposed to cold. The temperature of the extremities is low and edema is absent. Buerger's circulatory test is negative.

In primary erythromelalgia, pulsation of the peripheral arteries is increased with dependence, but there is no excessive rubor and no excessive pallor on elevation. Claudication is absent, and gangrene practically never occurs. Rest pain is mild, and the burning sensation is severe. There is no superficial phlebitis. The age is between thirty and fifty years of age, occurring in females in 70 per cent of the cases, and occurring in any race. Roentgenologic examination is normal. There are no color changes following exposure to cold and the temperature of the extremities is always elevated. There is no edema, and Buerger's circulatory test is negative.

Acrocyanosis and acroasphyxia are mild forms of vasospastic disorders which were described by Mueller as those occurring in people with vasoneurotic constitutions. Causalgia is practically always caused by trauma to a peripheral nerve, mostly the median nerve. There are tender joints, muscle spasm and glossy skin. It is also a vasospastic condition. Scleroderma is a disease of the skin but is occasionally confused with spastic vascular diseases. Its most characteristic feature is the

"Tentative Clinical Classification of Arterial Diseases," by Brown and Henderson

- Functional or vasomotor types
  - Local distribution
    - Vasoconstricting types
      - 1. Multiple-phase color reaction; Raynaud's disease.
      - 2. One-phase color reaction; acrocyanosis, dead finger, local syncope.
    - Vasodilating types
      - Primary erythromelalgia.
  - General distribution
    - Vasoconstricting types
      - Primary or essential hypertension (early stages).
    - Vasodilating types
      - Primary or essential hypotension
- Organic types
  - Local distribution
    - 1. Arteriosclerosis, with or without thrombosis; diabetic gangrene.
    - 2. Thrombo-angiitis obliterans.
    - 3. Arteritis of known infectious origin (rheumatic).
    - 4. Aneurysm with or without thrombosis.
  - General distribution
    - Arteriosclerosis.
    - 1. Primary.
    - 2. Secondary to hypertension.

leathery feel and appearance of the skin.

If one takes into consideration the signs and symptoms of each disease and then refers to the "Tentative Clinical Classification of Arterial Diseases," by Brown and Henderson in the *Journal of Bone and Joint Surgery*, 1927, IX, pp. 613-627 (see p. 291), he should have little difficulty in arriving at a correct diagnosis in most cases.

Prognosis

The prevailing idea that Buerger's disease is chronic and progressive is erroneous. Our best proof of this is that collateral circulation is noticed when amputated legs are injected with radiopaque substances. The disease is usually self-limiting, since the occlusive nature of the disease stops and the course of events is canalization, organization, the formation of new vessels, and adequate collateral circulation. If this be interfered with by trophic changes, edema and gangrene, in most instances the process has been going on for some time. Therefore, the favorable prognosis of Buerger's disease, arteriosclerosis, and to a less extent Raynaud's disease, depends on the early recognition and the institution of proper prophylaxis and treatment. After gangrene has started, the results in many cases are good, but obviously less favorable. The period in most cases between the onset of the initial symptoms and the presence of gangrene should be emphasized. There have been reported cases in which there were symptoms of twenty-three years' duration before gangrene occurred. This might well be called the prodromal syndrome during which many of the patients have been treated for frostbite, flat feet, metatarsalgia, rheumatism, and frequently operated upon for deep-seated infection about the extremities with the result of slow healing or gangrene. The prognosis, finally, depends upon three things: First, early diagnosis; second, proper prophylaxis and long continued treatment; third, avoidance of surgery of the extremities for minor infections in the presence of this disease.

Prophylaxis

Hygienic measures are of the first importance. Early eradication of infection and the avoidance of trauma are essential. The extremities should be kept warm, clean, dry, free of scaly skin, brittle nails, and corns. Scaly skin and brittle nails are best treated by the application of hydrous lanolin. Surgery on corns and infection about the nails should be avoided in the presence of this disease. Injecting superficial veins with poor pulsating arteries is also very dangerous. Footwear should be loose, with two pairs of woolen socks frequently changed. Waterproof shoes retain the perspiration and those that allow ventilation also allow water and cold. If they become wet or greasy, the air spaces are filled and they become good conductors of cold.

Reestablishing the circulation in vascular diseases and frostbite is important. If it is quickly reestablished, it produces a hyperemia and transudation of serum into soft tissues, causing an edema which compresses the blood vessels and lessens the circulation in an already inadequate blood supply. This is also accompanied by excruciating pain which patients describe by saying their "fingers are busting." These conditions should be treated by the application of dry, moderate heat and massage. Rubbing of snow or excessive heat on the part affected is dangerous. If solutions are used, they should be isotonic, and care should be taken not to injure the skin. Alcohol and tobacco should be discontinued; however, excessive smoking is often begun with the onset of severe pain.

Treatment

There have been over one hundred different treatments tried for Buerger's disease, but practically all have met with failure. The present method of treatment as recommended by Brown, Allen and Mahorner is most encouraging. They divide treatment under five heads, as follows:

1. Those with extensive gangrene with or without rest pain. The treatment is amputation, and vaccine if necessary for pain and healing.

2. Those with mild trophic changes with severe rest pain. The treatment consists of medical measures for relief of pain. If this is successful, then medical and physical measures are begun to increase the collateral circulation:

a. Rest.
b. Heat.
c. Contrast baths.
d. Exercises.
e. Removal of infection.
f. Prophylactic measures.
g. Typhoid vaccine intravenously.

h. Lumbar or thoracic ganglionectomy in suitable cases.

3. Those with mild trophic changes without rest pain. The treatment consists of medical and physical measures, depending upon the progress of the disease.

4. Those with severe rest pain without trophic changes. The treatment is the same as in Group 2.

5. Cases with rest pain and trophic changes. Prophylactic and medical treatment to increase circulation and prevent gangrene.

Samuels is of the opinion that absolute abstinence from smoking is essential in healing gangrenous ulcers. He stresses the importance of rest in bed in a horizontal position, the cleansing of the gangrenous areas with chloramine solution and the application at first of anesthetic ointments, then soothing antiseptic ointments, and the use of 5 per cent saline intravenously every other day. I have in several cases used chloramine to cleanse the superficial ulcers, and later acroflavine, exposing the area to sunlight during this period, and, finally, skin grafting the denuded area, with excellent results. I have been unable to confirm the advantage of saline over typhoid vaccine.

According to Dean Lewis, the injection of 60 per cent alcohol in the popliteal nerves relieves the pain in patients with marked suffering and should be tried before ganglionectomy is considered. The motor paralysis following this injection lasts only about three months.

Summary

Buerger's disease is a self-limiting disease in most cases. Amputation is never indicated in the early cases, and only when gangrene is extensive and other treatments have failed. Prolonged treatment and conservatism should be practiced, especially conservatism in regard to surgery. Pain and gangrene are now controlled in cases that were considered hopeless a few years ago. This disease is common, and if sought for will be found.

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TREATMENT OF SECONDARY ANEMIA.*

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Anemia may be defined as a reduction in the amount of circulating oxygen carrying constituent, namely, hemoglobin. A reduction of circulating hemoglobin is in most instances associated with a reduction of the cells which carry hemoglobin, namely, the red cells.

Under normal conditions, or, we might say, during normal metabolism, there exists a very delicate balance between the production and destruction of red blood cells. Small variation in either formation or destruction is usually compensated for, but when this balance or equilibrium is greatly changed and is continued over too long a time, then anemia exists.

Secondary anemia may be produced by mechanical blood loss, by alteration in blood formation, or by increased blood destruction. If blood is lost, or if there is an increase in the

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destruction of red corpuscles, the red bone marrow compensates by producing red cells at a more rapid rate than normal. In such a case, especially if the loss or destruction is great, the red corpuscles so produced are frequently small, contain a subnormal amount of hemoglobin, and may contain a nucleus, which denotes that the cell is not fully matured. In the course of time these immature cells are replaced by normal cells and the red bone marrow returns to a normal rate of production. But if the loss or destruction is continuous or intermittent, as in chronic anemiaes, the blood contains more and more abnormal red cells. The erythroblastic tissue further attempts to compensate for this continuous demand for red cells by invading and replacing the yellow marrow which does not form red blood cells. If the demand is in excess of the capacity of the erythroblastic tissue to respond, the condition of the blood seen in the chronic anemias develops, namely, a decrease in number of red blood cells, with loss of hemoglobin, and presence of abnormal type of cells.

In anemia due to repeated blood loss, as in ulcers of the gastro-intestinal tract or fibroids or polypi of the uterus, the obvious factor is the loss of blood. In anemia caused by the hemolytic toxins, the destruction of the red corpuscles is the chief factor concerned. In anemia secondary to malignant disease, as in cancer of the stomach, the anemia may be due to several factors. First, there is a toxemic condition caused by absorption of products of decomposition in the growth itself: hemorrhage may be present, an increase in the destruction of red corpuscles, disturbance of nutrition leading to lack of proper food supply for the erythroblastic tissue, and the possible action of the autolytic products of the cancer cells which may inhibit the activity of the bone marrow.

In the treatment of secondary anemia, organic disease must be looked for. Malaria, syphilis, nephritis, chronic poisoning from known chemicals or biological agents, infections, malignancy, etc., must be treated in addition to the treatment of anemia.

In this paper I shall discuss briefly the effects of diet, drugs and blood transfusion.

Diet

The most important experimental work concerning the effect of food on blood regeneration has been done by Whipple and his associates and Minot and Murphy, of Boston. Their carefully controlled work on dogs has demonstrated clearly the value of certain foods in accelerating blood regeneration following acute hemorrhage. McCullum has pointed out that a diet of kidneys and liver give an exceptionally high quality protein for a low protein intake, and can enhance remarkably the growth of animals.

Excess of fatty diet is considered by many to be contra-indicated. Fat is thought to favor putrefaction within the intestinal tract, and the substances thus produced cause a destruction of red blood cells.

Foods containing high iron content are desirable because of favoring hemoglobin production. Fruits, leafy vegetables, strawberries, apricots, peaches and prunes are especially beneficial.

The one oustanding remedy in the treatment of anemia is liver. Liver is not a specific in secondary anemia, nor is its effect so spectacular as in pernicious anemia. In pernicious anemia the response to liver feeding is noticed within the first ten days. In secondary anemia the results are less striking and a period of several weeks' feeding is sometimes required before appreciable results can be expected. Since liver must be given in large amounts and continued over a long period of time, it is extremely difficult to get some patients to take the required amount. Whipple, working with Walden of the research laboratory of Eli Lilly & Company, had produced a liver fraction or extract, which weighs but 3 per cent of the original whole liver, yet contains 65 to 75 per cent of the potency of whole liver. The secondary anemia fraction as prepared for this work is palatable and can be digested in large amounts without any clinical disturbance. The diet then should be one selected for its richness in vitamins, containing large amounts of fruit juices and vitamin-containing vegetables, liver, one-half pound, per day or its equivalent in liver portion, kidney, beef muscle, sausage, green and leafy vegetables, apricots, peaches and prunes. Yeast is beneficial in some cases as it may bring about a change in the intestinal flora.

Drugs

Experimental work, also clinical experience, has demonstrated conclusively the value of iron both in anemia following hemorrhage and that due to faulty nutrition. Reports from Whipple and Dykes show that iron supplements the

action of other substances, and, in addition to providing a supply of iron, it probably has a "salt action." Liver together with iron is more effective than liver alone or iron alone in anemic conditions. The preparation of iron used does not make any material difference, but should always be given in large doses and continued over long periods of time. Copper has recently been advocated as a supplement to iron. Where hemoglobin regeneration has been slow under iron medication alone, marked improvement has been noticed when copper was used in combination with iron. Lewis, of Nashville, has recently reported very favorable results in the treatment of anemia in children. The preparation used is .5 per cent solution of copper sulphate, given in one to two teaspoonful doses three times a day.

Arsenic appears to have little effect on blood regeneration. It is indicated in treatment of anemia associated with syphilis or malaria. Desiccated stomach has been used in some cases and also extracts of spleen and bone marrow, but are of doubtful value.

Tranfusion

Our enthusiasm seems to come and go regarding transfusions. A few years ago a great many more transfusions were done for secondary anemia than are being done now. I have seen some of the most gratifying results from transfusions, following severe hemorrhage, or bleeding continued over a long period of time. Of all the methods of intravenous treatment in shock, blood transfusion most nearly approaches the ideal. It will raise the blood volume, increase blood pressure and supply the needed oxygen carrying corpuscles. In chronic anemia when the volume of blood has been low for a long time, and especially in infections or anemia following infections, transfusions are of great value. I have seen a case of the most severe and prolonged bleeding from a gastric ulcer, in which the patient was rapidly approaching dissolution, entirely relieved of hemorrhage within a few minutes after transfusion. In prolonged bleeding from the nose, uterus, or other organs, transfusions have often given immediate relief in controlling the hemorrhage. Before surgical operation in anemic patients or in those having lost much blood, there is no other remedy of such value as blood transfusion.

The blood must be properly matched, and Wassermann test made, unless the case is an extreme emergency. If the blood is carefully matched and is not given too rapidly, the reaction should be slight. Therapeutically, it makes little difference as to the use of citrated blood or blood given direct. We prefer direct transfusion as the reactions are less.

Summary

The treatment, then, should consist of a well balanced diet, containing large amounts of liver or liver extract, kidneys and muscle fiber, leafy vegetables and fruits, which, together with iron and copper, given in large doses, and blood transfusions, make up our best treatment for secondary anemia.

THE VALUE OF BLOOD EXAMINATIONS IN PUBLIC HEALTH WORK.*

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The correlation of the findings on examination of the blood with the practical application of preventive medicine has progressed steadily with discoveries in these fields. Blood examinations constitute a relatively large percentage of the laboratory work, which has an important place in public health. They have helped to solve many questions of epidemiological importance, such as the presence and extent of a communicable disease, the determination of carriers, and the relative immunity of an individual or a group, and they are frequently a substantial aid in arriving at an early diagnoisis, thereby facilitating control.

Most of the examinations performed on blood in public health laboratories are of a serological nature, and may be subdivided into those determining the presence of specific agglutinins, and the complement-fixation tests. In the former category are included those procedures aimed at the diagnosis of such important diseases as typhoid, typhus and undulant fevers, and tularemia. The Wassermann reaction is the striking example among complement-fixation tests and is more extensively performed today than any other laboratory determination. Serum precipitation tests, such as the Kahn, have assumed relatively great importance in the control of syphilis in recent years. The examination of the blood smear also has an important place in the health laboratories of those communities in which malaria is prevalent.

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The agglutination reaction, first described by Wright[1] for the disease called Malta fever by him and now termed undulant fever, is a notable example of delay on the part of the medical profession in applying an important test to practical work. Not only did Wright describe the technic for the agglutinin determination but he also pointed in a later article[2] to the possibilities of this test in working out the geographical distribution of undulant fever and reported the occurrence of this disease in India,[3] although it had previously only been described in certain Mediterranean countries. In spite of this brilliant work, undulant fever was not recognized as being endemic in the United States for fourteen years, until Gentry and Ferenbaugh[4] located a focus in one of the goat-raising sections of Texas. This failure to recognized undulant fever was probably due to its close similarity to typhoid fever and tuberculosis, to the assumption that it occurred only in those people drinking goat's milk, and possibly to the varying agglutination power of sera from undulant fever patients. Evans[5] did much to increase our knowledge of the extent of the disease by demonstrating that Brucella melitensis and the organisms of infectious abortion in cattle and swine are practically identical. Observations within the past decade or two indicate that the disease is world-wide in distribution, and routine performance of the agglutination test for Brucella melitensis on all sera submitted to laboratories for Widal examination has done much to indicate the prevalence of this fever in the United States.

Tularemia offers another example of the accomplishments attained by close association of field work with the laboratory. Agglutination tests have also assumed an important role in showing the geographical distribution of this disease and cases have now been reported in all of the United States, except Maine, New Hampshire, Vermont and Connecticut, as well as a number of countries in Europe and Asia. Unfortunately the blood serum from some cases of tularemia shows a cross agglutination with Brucella melitensis, but the organism of tularemia may be separated by agglutination absorption tests. This subject has been taken up in detail by Francis and Evans.[6]

The importance of the Widal test for typhoid fever and the Weil-Felix agglutination reaction for typhus needs hardly to be discussed. The employment of the latter test has furnished part of the evidence necessary to prove that the so-called Brill's disease of the United States and European typhus are identical. The inability to demonstrate the presence of lice on cases infected with Brill's disease led to doubt for some time as to the identity of these diseases, in spite of the elaboration of similar agglutinins in the blood serum in both diseases. Recently, however, Dyer, Rumreich and Badger[7] have shown that Brill's disease has an animal reservoir in the rat an dthat fleas from these animals of the types Xenopsylla cheopis and Ceratophyllus fasciatus are capable of producing a disease in monkeys and guinea pigs in all respects similar to typhus fever of the European and American (Brill's) types. Cross immunity tests further substantiate these observations.

The Weil-Felix reaction has also been found to be positive in cases of spotted fever of the Rocky Mountains. A disease, immunologically indistinguishable in animals from Rocky Mountain spotted fever but distinct from both European and American typhus, has recently been described.[8] It has been noted to occur in man in the eastern portion of the United States. The exact distribution of both American typhus and Rocky Mountain spotted fever is unknown, and it therefore behooves all physicians to insist on a Weil-Felix agglutination test for patients having a fever of unknown origin, especially when a rash is present.

The Wassermann complement-fixation test stands out more than any other procedure as one of the most important laboratory aids in preventive medicine. The prevalence of syphilis is believed to be sufficiently high to justify this statement, and there can be no excuse for failure to adopt routinely a serological test for syphilis by all organizations caring for the health of mankind.

The Division of Venereal Diseases of the United States Public Health Service estimates that there are 643,000 cases of syphilis constantly under medical care in the United

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8. **Ibid.**, XLVI, 463 and 470.

States. This estimate is based on surveys in twenty-five localities, ranging from small rural communities to the great metropolises of the country—the result of a one-day census of the number of cases under treatment or observation as reported by 31,847 sources of treatment. These physicians, hospitals, clinics and institutions were administering to an estimated population of 24,000,000 persons.

An unpublished compilation of reports on file in the United States Public Health Service, of forty authors giving the results of a Wassermann test in 47,363 pregnant women, demonstrated that 6.9 per cent were positive. These studies range from less than 100 women up to more than 7,000, and most of them were delivered in hospitals of the United States and Great Britain. The per cent of positive Wassermanns ranged from less than 1 per cent, as reported by Kilduffe,[9] to a study by McCord[10] among negroes of 22.5 per cent. Obviously this per cent of positive Wassermanns, nearly seven per 100, is higher than would be expected in an unselected sample of adult females from the general population.

In a total of 28,195 negroes in six counties in as many southern States, 5,785, or 20 per cent, were found to have a positive blood Wassermann,[11] and all of these cases yielded a second positive complement-fixation or precipitation test on the recheck. There is no doubt that these figures justify the routine employment of a serological test for syphilis in hospitals, clinics, and similar institutions, and their use in making surveys of the general population is one of the more important public health functions.

There are several other blood examinations which have a fairly important place in preventive medicine but these will not be considered at this time. It will be sufficient to stress, in concluding, the great importance of the employment of the undulant fever agglutination test and of the Weil-Felix reaction in all cases of fever of unknown etiology, and to urge a continual and persistent search for syphilis.

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10. McCord, Jas. R., Am. Jour. Obstet. and Gynec., St. Louis, 1926, XI, 850.

11. Annual Report of the Surgeon General, U. S. Public Health Service, 1931.

Contentment is a frame of mind
That we, alas! too seldom find.
—*Selected.*

TYPHOID ULCERS OF THE STOMACH: REPORT OF A CASE.

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and
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That lymphoid hyperplasia and ulceration may occur in the stomach in typhoid fever is recognized by the authors of several textbooks of pathology and of surgery. Very few reports of actual cases are to be found in the literature, however.

Walter Hughson[1] comments with regard to typhoid fever: "Though the disease is characterized by ulceration of the small intestine, involvement of the stomach in typhoid is a complication of the greatest rarity. Sometimes gastric distress is complained of and vomiting may occur. An actual hematemesis may develop. Perforation of a typhoid ulcer in the stomach has been reported, but this unusual circumstance should not be confused with the possibility of perforation of a simple gastric ulcer."

Powers and Hala[2] simply state that lymphoid hypertrophies have been observed in the stomach in typhoid.

Kaufmann[3] observes that "In typhoid fever, the lymph follicles (of the stomach), the number and extent of which are extremely variable, swell, undergo necrosis and ulceration, but very rarely."

Proskauer,[4] in 1907, reported a case in which typical typhoid ulcers were found at autopsy in the stomach and duodenum of a nine year old boy. He also cited a case from the literature prior to that date in which such ulcers were described in the duodenum.

Case Report

The patient, a white male, 30 years of age, working as a street car conductor, became ill with a severe headache and stiffness of the neck on August 11, 1930. The following day he had two chills and a marked fever. He vomited several times on August 15th and 16th, and complained of some abdominal soreness. On August 19th he was admitted to the medical service of Memorial Hospital with a tentative diagnosis of typhoid fever.

Physical examination at that time showed a flushed hot skin, a brown furred tongue, and a few rose-spots over the chest and abdomen.

Heart and lungs were not abnormal. Pulse was dicrotic; blood pressure, 130/80. The spleen was palpable, and there was a slight tenderness over the abdomen. Urine, blood chemistry and Wassermann findings were essentially negative. The W. B. C. was 5,000, with 70 per cent neutrophils. Widal test was positive for typhoid.

Fig. 1.—Margin of one of the ulcers in the stomach. Diffuse inflammatory inflammation without organization borders a necrotic surface.

During the night of August 20th the patient had several liquid stools, and at 5 A. M. complained of sharp colic-like pains in the lower right abdomen. He began hiccoughing at that time. The W. B. C. was increased to 13,200, of which 80 per cent were neutrophils. A laparotomy was performed that noon under spinal anaesthesia. A diffuse suppurative peritonitis was found, with a thin yellowish exudate and beginning adhesions between loops of bowel. The lower ileum presented a perforation of 1 mm. in diameter near the cecum. This was sutured and the abdomen closed with drainage.

The temperature ran a septic course, rising to 102° and on one occasion to 104° F. The patient suffered from distention. Gastric lavages yielded large amounts of dark green fluid. On August 25th the urine showed traces of albumen with sugar three plus; the W. B. C. was 5,400. Death occurred on September 1, 1930.

Autopsy: Gas having a sulphurous odor escaped from the peritoneal cavity on opening the abdomen; about a liter of grayish-white pus was enclosed. On opening the stomach two ulcers, approximately 1 and 1.5 cm. in diameter, were found on the posterior surface of the greater curvature near the pylorus. They extended through the mucosa; their edges were ragged, not elevated, indurated, or discolored. Duodenum and jejunum were grossly normal. The ileum was distended, and its terminal portion embraced several ulcers having soft grayish edges and bases. The site of an operative repair of a perforation was found 10 cm. from the ileocecal junction. This loop was bound down on itself by fibrinous adhesions. A perforation about 2 cm. in diameter with semi-fluid gray edges occurred immediately proximal to the operative site, while a similar small perforation occurred at the site of one of the sutures. Mesenteric lymph glands were enlarged and hemorrhagic. The liver was somewhat enlarged, smooth and friable. The spleen was enlarged, soft and red; the Malpighian corpuscles were readily seen. The kidneys, ureters, bladder, adrenals, gall-bladder, and pancreas were grossly normal.

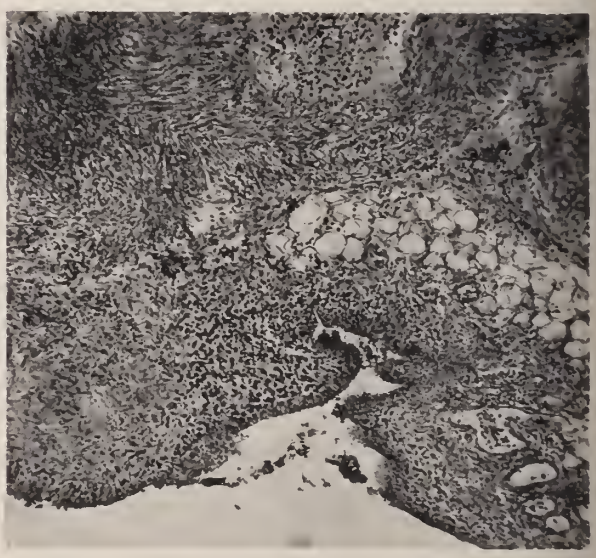

Fig. 2.—Musculature and serosa at site of the ulcer shown in Fig. 1. The infiltration is seen to extend throughout the wall.

In the thorax a few fibrous adhesions were associated with the pulmonary apices. Both lungs were hyperemic, with partly atelectatic lower lobes embracing foci of bronchopneumonic consolidation. The myocardium was soft and pale, the endocardium opaque and

gray. Otherwise the thoracic structures were not remarkable.

Microscopic description: Toxemia of moderately marked severity was manifest throughout the viscera. In the myocardium, muscle fibers were swollen, presented fibrillar disintegration, and were fragmented. Epithelium in the liver, kidneys, pancreas and adrenal glands was in a state of granular cytoplasmic swelling. Reticulo-endothelial hyperplasia was seen in the spleen, and perivascular histiocytic aggregations occupied a scattered distribution in the tissues generally. Focal necroses occurred in the liver with more bulky areas of coagulative necrosis in the mediastinal and mesenteric lymph glands.

A moderately marked passive hemic congestion was seen in lungs, liver, spleen, adrenal glands and kidneys. In addition, areas of atelectasis, of bronchopneumonia, and of hemorrhagic infiltration occurred in the lungs.

The ulcers: The ulcers of the stomach and those of the ileum which had not perforated were sufficiently alike in structure to permit their being described together. In both, the bases lay in the muscular or deep in the sub-

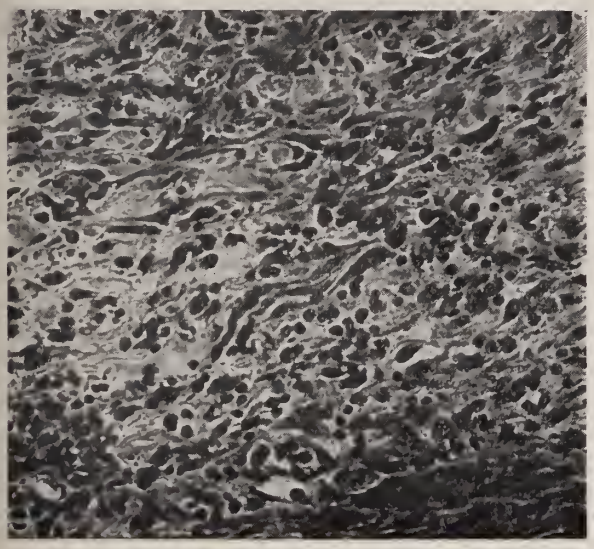

Fig. 3.—A higher magnification to show the character of the inflammatory infiltration about the ulcer shown in Fig. 1. Lymphocytes and histiocytes (mononuclear wandering cells) predominate.

mucosal strata. In some instances the bases and margins were washed clean of necrotic debris, while in others tissue in a state of coagulative necrosis embracing thrombosed venules lined the ulcers. A variable amount of inflammatory infiltration, consisting essentially of lymphocytes and macrophage histiocytes in an oedematous stroma, bordered the surface of the ulcers. This was marked in some sections, and associated with vascular endothelial hyperplasia and lymphatic vessels distended with phagocytes. This reaction extended through the interstices of the muscular strata to the subserous stratum in most of the sections. The latter was oedematous and em-

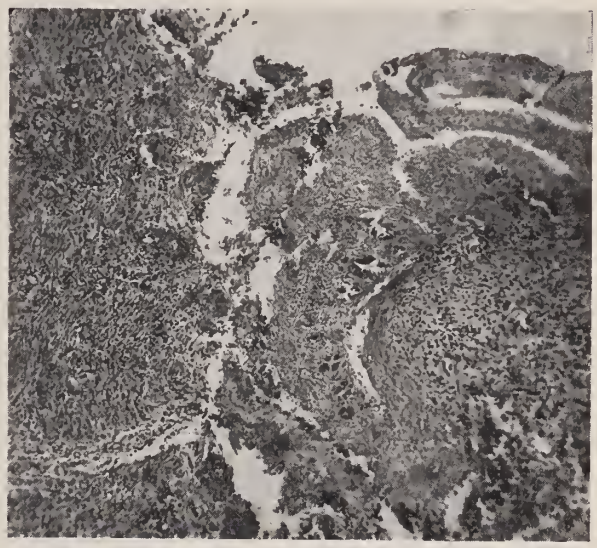

Fig. 4.—Margin of one of the ulcers in the ileum for comparison.

braced a few polymorphonuclear leucocytes in addition to the preponderance of mononuclear cells; in some areas a fibrinous serosal exudate was still intact. Fibroblastic proliferation was meager and indefinite everywhere.

Comment: The ulcers of the stomach are unlike chronic gastric ulcers in the absence of granulation tissue induration, and unlike acute non-specific ulcerations in the absence of a predominance of polymorphonuclear leucocytic infiltration and exudation. As judged by the type and degree of inflammatory response, the ulcers of the stomach and of the ileum are of the same relatively short duration. The reactions in the tissues about them are characteristic of that of typhoid infection, in which lymphocytes and macrophage histiocytes predominate in the infiltration. Except for normal histological considerations and perhaps a somewhat greater degree of infiltration in the ileum, the ulcers in the two locations cannot be distinguished from one another. We are left with the inference that the ulcers of the

stomach in the case herein reported are typhoid in nature.

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INTERMITTENT COMPLETE HEART BLOCK: A CASE REPORT.*

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In the patient whose case is here reported, complete heart block of two years' duration has alternated with, and in recent months has been largely replaced by, normal sinus rhythm. This sequence of events is extremely rare, has both physiological and clinical interest, and from the therapeutic standpoint in the present instance, consideration of the value of the general management of the patient—in comparison with what was not done in the use of drugs—is of some practical importance.

CASE REPORT

H. W., a white man, aged 80 years, a retired surgeon, was referred by Dr. John Minor for electrocardiographic study and opinion on October 26, 1929. His chief complaints were of slight dyspnea on exertion, of an occasional sense of pressure in the head, and more particularly, of a slow pulse, which would drop sharply from 70 beats per minute to a rate of 38 or 39 beats per minute.

The family history was irrelevant and with no interruptions by ill health the patient had led an active and distinguished professional life until past 70 years.

In April, 1929, the present illness began with influenza, followed by pneumonia. The patient was in bed for a month, and convalescence was marked by weakness, shortness of breath on exertion and the slow pulse.

No fainting attacks and no pain had occurred. On exercise there is a "feeling that the heart is there." The pressure or fullness in the head is occipital in distribution, is more noticeable in the evening, is often present after meals, and the pulse is then slow. Digestion has been impaired, the patient has lost ten pounds, sleeps poorly and has nocturia three times. The urine has been highly acid. For a month he has had cramps in his legs, chiefly at night.

Examination showed a small-framed, rather frail, mentally alert elderly man, who was able to walk into the office, without dyspnea. The blood pressure was 160/90, the peripheral arteries moderately thickened, the retinal vessels not changed. The aorta was not widened, the heart was slightly enlarged to the left. The sounds were of fair quality, and none were adventitious.

The apex rate was synchronous with that at the wrist, at 41 beats per minute. Rhythm was regular.

The other organs were without pathological findings and signs of congestive failure were absent. The reflexes were active.

The electrocardiogram confirmed the clinical diagnosis of complete heart block by demonstrating auricular and ventricular rates of 75 and 41 beats per minute, respectively. The amplitude of all the waves was good and there was no evidence of intraventricular block. From the supraventricular type of QRS complex, the ventricular pacemaker was placed in the A-V node or upper bundle.

From the standpoint of the patient's general condition of health it seemed wiser to build up his strength by promoting sleep and digestion. He was permitted to continue his golf in moderate doses as a mental and physical tonic, and iron, quinine and strychnine was also suggested.

A year later, October 14, 1930, the patient came in for a second examination, with the history that two weeks before he woke up in the morning and found his pulse 72. His head "felt different and more natural." This rate continued for two hours, then dropped sharply to 39. With the transition there was no faintness. The patient found that with a slight amount of activity his rate would remain at 70 or 72 beats per minute, never higher, and with more exertion would abruptly fall back to 38 or 40. Such changes occurred without dizziness, faintness or other symptoms.

His general condition throughout the year had improved, his physical signs were unchanged. The blood pressure at one examination had been 200/90.

At this examination, it was of interest to find that the ventricular rate approached 50

*Read before the George Washington University Medical Society, November 21, 1931.

beats per minute (a level intermediate between the idioventricular rate at 40 and the rate of 70 noted by the patient) and that the regularity of the rhythm was interrupted by frequent coupling of the beats. The electrocardiographic findings, therefore, were of unusual interest. The auricular rate was again 75 per minute, with complete dissociation. Alternate contractions of the ventricle were followed by the beats which produced the coupling found on palpation. The slight variation in amplitude of the QRS and T waves of the second beat of each couple gave additional evidence of two pacemakers. That the second pacemaker was less assured in its position of control might be inferred from its falling out after each alternate beat.

The patient's plan of management was unaltered and he was again seen through the courtesy of Dr. Minor on October 7, 1931.

During the winter in the South he had played golf and felt better for the exercise, but during the summer in Boston he was dyspneic upon exercise. In general there had been little or no palpitation or other symptoms. Since September 15th, however, his heart action has shown frequent transitions from a high level of 72 beats to a low level of 38 beats per minute. Such periods of change have been accompanied for a second or two by a feeling of pressure in the head, dizziness, and of suddenly going blind. There has been no loss of consciousness. The rate is nearly always 70 on arising and may last all day, but too much exercise brings the slowing. The cramps in the leg still occur at times and occasionally there is a twinge of precordial pain. For several weeks there have been unusually severe digestive disturbances, with constipation and lower abdominal pain. The gastro-intestinal study was negative.

On this visit the patient walked in and sat down with a pulse which was regular in rhythm and at a rate of 34 per minute. While I was counting it, it rose abruptly to 64 per minute, without intervening pause or irregularity and without subjective symptom. It remained at this level or a few beats higher during the visit. The blood pressure was 148/86. Vagus pressure brought no change in rate.

The electrocardiogram showed sinus control of the heart, with a rate of 65 beats per minute and a P-R interval of 0.24 sec.

Several weeks later the patient reported that his rate was remaining fairly constantly at the higher level, but never above 72. With care of his digestion, he was much improved.

Comment

In summary, a man of 80 years, with hypertension and arteriosclerotic changes both in heart and peripheral vessels, developed complete heart block after influenzal pneumonia. Following a stage during which the idioventricular rhythm was fairly constant, there ensued with improvement in his general health a period marked by frequent sharp transitions between sinus control and complete block.

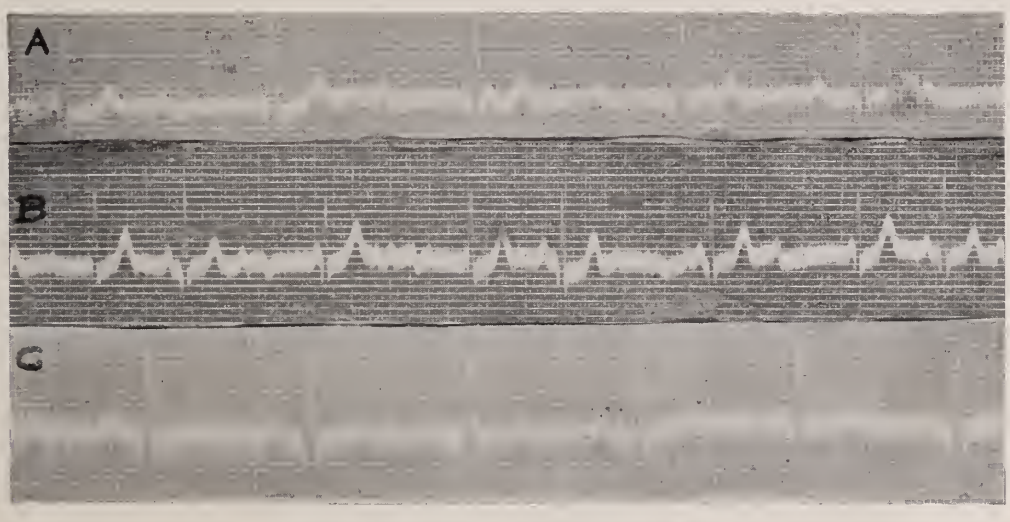

Fig. 1.—Lead II of electrocardiograms of patient H. W.
A. Oct. 26, 1929. Complete Heart Block. Auricles 75, ventricles 41.
B. Oct. 14, 1930. Complete Heart Block. Auricles 75, ventricles 46. Coupled beats are present.
C. Oct. 7, 1931. Normal sinus control. Rate 65. P-R interval 0.24 sec.

Sinus rhythm has now become the more constant finding, but the delicate balance between the two mechanisms is indicated by the abnormally prolonged auriculo-ventricular conduction time and by the prompt return of idioventricular rhythm when physical activity is carried beyond certain bounds. Adams-Stokes attacks have been conspicuously absent.

The physiological factors which underlie such transitions in rhythm have been much discussed, particularly in regard to local circulatory changes within the heart affecting the blood supply of the nodes and the bundle. In one of these rare cases, reported some years ago with Pardee, the various mechanisms leading to block and independent ventricular action were discussed, and in a more recent paper, the rapid bombardment of an already diseased bundle by the impulses of auricular flutter (auricular rate 274, ventricular rate 44) was considered as the important factor in producing the complete block. In the present patient, it is of interest that he has never found his heart rate above 72 beats per minute; is it possible that any higher auricular rate at once brings such fatigue of the bundle as to precipitate total dissociation?

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PEMPHIGUS OF EYES, NARES, PHARYNX AND LARYNX.

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Pemphigus is rare. Defined briefly, it is a systemic disease characterized by successive crops of bullae which may involve skin, mucous membranes of respiratory and gastro-intestinal tracts, conjunctiva and viscera. An autopsy reported by Seal showed edema of pia mater, a hypostatic congestion of lungs, membranous enteritis and a hyperplasia of the spleen. Disseminated vesicles on the serous surfaces of liver, spleen and pleura have been observed.

Etiology: There are few etiological factors known. It occurs anywhere and at any season. Males and females of all ages and races are about equally affected. There seems to be a certain connection with atrophic nerve changes. It has been noticed in debilitated individuals whose resistance has been impaired but there is no definite proof that debility is the sole cause. The bacteriology of the lesions is not constant and is considered as a secondary invasion. All attempts at producing the disease secondarily have been unsuccessful.

Morbid Anatomy: The areas involved will have the characteristic blebs though those of the mucous membranes rupture early, probably within a few minutes to an hour, due to their thin walls and the trauma associated with mastication and blowing of nose. These factors account for the rarity of seeing the typical lesion on the mucous membranes. After rupture of the bleb the mucous membrane has a "dead" appearance. Removal of this membrane shows beneath, an eroded area that is tender and bleeds easily.

Special Symptoms: Involvement of mucous membranes may appear years before skin lesions. There is frequently a prickling or burning sensation and pain on swallowing, with a marked expectoration when the mouth is involved. With laryngeal involvement there is hoarseness, followed later by aphonia and dyspnea. With involvement of the alimentary canal, intestinal cramps and digestive disturbances are usual. Cicatrization may occur in the larynx and nares and always if the conjunctiva is involved.

Prognosis: This is unfavorable if mucous membranes are involved. There may be periods of remission but death usually occurs between a few weeks and a few years. If the cornea is involved, blindness results.

Treatment: Treatment is of little avail. Supportive and palliative measures should be tried. Arsenic in any of its various forms may be used. Transfusions seem to help at times. Locally, methylene blue (solution of 20 grains to the ounce) silver nitrate and mercurochrome may be tried. Orthoform or anesthesin give temporary relief in throat involvement. Mild cleansing and disinfecting washes are indicated.

Case Report: Miss J. L., age 47. Seen first on October 4, 1927, complaining of "ulcerated nose which has been bleeding for two months."

Family History: Father, mother and two brothers died of "heart trouble" and its complications. One brother died of pulmonary

and laryngeal tuberculosis. Otherwise history unimportant.

Past History: Had typhoid during her "teens," otherwise health always excellent.

Examination of right nares showed a round dark red area, about one-fourth inch in diameter, situated on the septum slightly posterior to Kiesselbach's area. There was a corresponding area on the opposite side of the septum. The Wassermann was negative.

I did not see her again until October, 1928, at which time she came in complaining that for a few days her "eyes had pained and burned." During the past year she had seen several physicians. Complete examinations had been made with negative results. The nares had been treated frequently with sprays and protein silver preparations. The involvement had extended until the entire septum, both sides, had a raw granulating appearance which bled easily but not freely. Examination of eyes showed what appeared to be a mild conjunctivitis.

The eye condition gradually grew worse. There was pain, photophobia and lacrimation. There appeared gray patches on the conjunctiva which healed slowly with cicatrization. Several Meibomian glands became infected and greatly swollen.

March 9, 1929, the nasal condition seemed much improved after several weeks of X-ray.

March 21, 1929, there was complaint of "sore throat." There was a tough post-nasal discharge and redness of the pharynx. The vision at this time was: right eye 20/40; left eye 20/200. This error of refraction was due to astigmatism chiefly, caused by contraction of the scar tissue of the conjunctiva. Vision corrected to normal with cylindrical lenses.

June 20, 1929, there was obliteration of retrotarsal folds with trichiasis of both lower lids.

July 15, 1929, there was entropion of lower lids. Several Meibomian glands in each lid were swollen. There was a lot of purulent discharge in each eye. The involvement of nasal septum was more severe. Antra were punctured and irrigated in Richmond, Va., with negative washings. The pharynx was acutely inflamed. There was some hoarseness.

December 20, 1929. The patient was wearing a trachea tube which was introduced at Johns Hopkins Hospital, in October, 1929, on account of laryngeal stenosis. The adhesions of the lids were loosened at that time. The physical examination was negative. The larynx was dilated at intervals following the tracheotomy but the patient could talk in a whisper only. Typical pemphigus bullae appeared on the skin about November, 1929. Serum from the blebs was given subcutaneously.

August 8, 1930. All lids were adherent to the cornea and there was difficulty in seeing. The nasal septum had a raw granular appearance on both sides. Pharynx had same appearance. There was a brownish-yellow post-nasal discharge. The larynx had been dilated several times during the preceding months. Tryparsamide, intravenously, in two grain doses was given weekly for twelve weeks during May and June, 1930.

August 26, 1930. The lids were adherent to a greater part of the cornea of each eye. There was no vision in the left. There was sufficient vision in the right for the patient to see how to walk around. The nasal condition seemed greatly improved. There were several small adhesions of right middle turbinate to septum. The pharynx had practically a normal appearance.

November 30, 1930, the laryngeal stenosis was dilated at the University of Virginia Hospital. The trachea and bronchi were normal. There were numerous adhesions in the nose. Physical examination was negative.

For the next nine months she was given a series of blood transfusions at the University of Virginia Hospital with "moderate success." An iridectomy was done on one eye.

September 27, 1931, she was seen by her family doctor. At that time she had a myocarditis. Death occurred the following day.

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SUBCUTANEOUS EMPHYSEMA COMPLICATING MEASLES BRONCHO-PNEUMONIA.

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Subcutaneous emphysema as a complication of measles bronchitis, or broncho-pneumonia, is a condition rare enough to justify reporting. I was unable to find a reference to this complication in measles in Nelson's Loose Leaf Medicine, and could find only a brief mention in Abt's Pediatrics. No specific cases were reported in the latter text and no references were cited.

Spontaneous subcutaneous emphysema can result from the escape of air from the alveoli or bronchi in two ways at least. As a result of cough a break may occur in a necrosed area and thus permit air to reach the peribronchial tissues. Through extension to the hilus and thence into the mediastinal space, the air may eventually appear beneath the skin of the neck, face, etc. The more direct route implies adhesions between the visceral and parietal pleurae with tears in both membranes. This type is generally accompanied by pneumothorax. Cases of subcutaneous emphysema have been described in the lung manifestations or complications of influenza and in some instances the first route mentioned above was followed by the escaping air.[1] Spontaneous rupture of the lung in bronchopneumonia with the subsequent development of pyopneumothorax while uncommon is yet much more often seen than subcutaneous emphysema. I personally have seen two such cases in infants. One of these cases, reported in detail,[2] resulted from the rupture of a small staphylococcus abscess which permitted the establishment of a fistula between the pleural space and a bronchiole. The great majority of spontaneous breaks through the pleura which permit the escape of air result from tuberculosis. So frequently does tuberculosis appear as the cause of such accidents, it must always be considered until it can be definitely eliminated.

Report of Case

Patient, R. L., 6 years old, was seen on April 17, 1931, in consultation with Dr. W. W. Dunn, who subsequently turned the case over to me for treatment.

F. H.—The father and mother are living and in good health. The mother once had an attack of pleurisy following influenza, and was ill six weeks. There was no other history suggestive of tuberculosis in the family. There are two other children in the family living and well.

P. H.—The patient was a full term baby. His birth was normal. He was breast fed for ten months. He walked and talked early. His health was good until he was two years old. At the age of two, he had influenza complicated by otitis media and pneumonia. He has never been as strong since this illness as he was before. During the past year, he had another attack of pneumonia, whooping cough, and influenza. He is usually somewhat underweight.

P. I.—When seen by me, he had been ill for several days with measles. The rash had been out for four days. A day previously, his physician had made a diagnosis of pneumonia of the left upper lobe. That night, the patient complained of severe pain in the left side of the chest and was very restless all night. During the night, the mother noticed the cheeks seemed swollen. The next morning she noticed swelling of the upper chest and neck.

Physical examination showed that he had a temperature of 104.6. The measles rash was beginning to fade. There was slight cyanosis of his skin. Both cheeks and the neck were swollen and crepitant. There was some extension of this crepitation over the upper part of the chest. The throat was red and clean. There was an apparent extension of the cardiac area of dullness to the right nipple. The left chest was hyperresonant throughout. The breath sounds were apparently slightly distant and of diminished intensity on the left, but some rales were heard throughout the left side. Sub-crepitant and crepitant rales were heard over the entire right side of chest. Examination otherwise was negative.

The patient was given a sedative cough mixture. The left side of the chest was strapped tightly with adhesive plaster and the patient was kept lying on the left side as much as possible. The mother was directed to change the child's position from time to time and to thump gently on the right side of his chest several times a day to drive air through the bronchial tubes.

For the next three days, there was not very much change in the child's condition, though he had recovered from the immediate shock incident to the rupture. During this time, there was little change in the physical signs in the

left chest, but the bronchitis or bronchopneumonia in the right lung practically cleared, and there was a gradual recession of the cardiac area of dullness towards the left. From the 20th to the 27th, the child steadily improved. The subcutaneous emphysema, however, extended down over the abdominal wall and air appeared in the right side of the scrotum. At this time, he was referred to the Johnston-Willis Hospital for further observation and X-ray examination.

A tuberculin test (1/10 mgm. of old tuberculin intradermally) performed on the 27th was negative. A similar test performed on the 1st of May was likewise negative. Blood examination revealed: Hgb. 64 per cent, R. C. 4,320,000, W. C. 7,600, P. 48, Sm.L. 47, L.L. 2, Eos. 3. Urine was negative.

Roentgen ray examination was reported as follows: "*Fluoroscopic examination* of chest reveals no evidence of any free fluid present. Excursion of diaphragm is equal on each side. *Stereoscopic examination:* Heart is slightly displaced to the left side. *Right lung:* Diaphragm curve normal. Hilum shadow shows some increase in glandular deposit which has a tendency to extend down to the base of the lung. Para-vertebral trunks show slight evidence of thickening along their course but no soft deposits. Extreme apex and periphery clear. *Left lung:* Diaphragm curve normal. There is evidence of a pleuro-pericardial adhesion at a point corresponding to the second rib anteriorly. The pleura along the mediastinal border shows some evidence of thickening. The peripheral pleura is clear cut in appearance. There is some glandular deposit around the hilum. Extreme apex and periphery of lung are clear. *Conclusions:* The findings would indicate that the heart is slightly displaced to the left side. The right lung shows evidence of some hilum thickening. The changes in the left lung show evidence of pleuro-pericardial adhesions corresponding to the second rib anteriorly. There is likewise evidence of some thickening of the mediastinal pleura which begins at the second rib anteriorly and extends down to the diaphragm."

From this examination and from the physical findings, it seems probable that this child had some adhesions between the visceral and parietal pleurae and that the tears occurred in that area. The physical examination suggested the presence of a pneumothorax which was rather promptly cured by the escape of some of the air into the mediastinal space and thence into the subcutaneous tissues and the absorption of the remainder.

When one considers the acute bronchitis and the probable pneumonia which was present at the time of the rupture, it would seem that this patient was very fortunate to escape an empyema or a mediastinal abscess.

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2618 *Grove Avenue.*

THE INCIDENCE OF PYELITIS IN THE FIRST TWO YEARS OF LIFE.*

ALGIE S. HURT, JR., M. D., Richmond, Va.

Much has been written recently concerning infection of the urinary tract in childhood, and the importance has been greatly emphasized[1, 3, 4, 8, 10, 11] of making complete urologic examinations in cases in which the infection persists in spite of intensive treatment carried out over a reasonable period of time. It has been pointed out by Campbell and Lyttle,[4] and other investigators, that in a large proportion of these refractory cases gross lesions of the urinary tract may account for the chronicity of the disease. Helmholz[8] has shown the necessity of making cultures of urine, and of not releasing patients from observation until the urine is negative bacteriologically.

There have been many estimates of the incidence of congenital anomalies of the urinary tract, and of infection of the urinary tract in infancy and childhood. A comparison between the two should be interesting.

Bugbee and Wollstein,[3] in 1924, reported a series of 4,903 necropsies on children in 2.3 per cent of which anomalies of the urinary tract were found. In 1929, Bigler[2] reported twenty cases (13 per cent) with urinary anomalies, in a series of 153 consecutive necropsies on children. Campbell and Lyttle,[4] in a series of 2,420 pediatric cases in which necropsy was done, found 2 per cent with gross evidence of ureteral obstruction. In a recent paper[9], I reported 101 consecutive necropsies on infants aged two weeks and less, in which anomalies of the urinary tract were found in 5 per cent. Since two of these anomalies re-

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sulted in early death, it was felt that 3 per cent was significant when considering anomalies to be met with later in life.

There are few accurate data on the frequency of pyelitis in infancy and childhood. One reason for this is the difficulty involved in following a large number of children from birth through early childhood. Smith,[12] in 1918, estimated that pyelitis constituted about 1 per cent of all cases observed by pediatricians. Gittings,[6] in 1922, reported that of 734 patients with febrile diseases treated in the medical wards of the Philadelphia Children's Hospital, 1.6 per cent had pyelitis. Moore,[7] in 1926, quoted Goppert as saying that in his practice 1.2 per cent of cases were pyelitis. Forbes,[5], in 1929, reported that of 16,367 patients admitted to the Denver Children's Hospital, a diagnosis of pyelitis was made in 0.53 per cent.

The present report is based on the records of a group of children born at St. Mary's Hospital, Rochester, Minn., during 1922 to 1928, inclusive. One thousand seven hundred and eighty infants were born alive, excluding those who died within a few days after birth. Of these, 733 had follow-up care by the Department of Pediatrics of The Mayo Clinic for the greater part of two years; 384 were boys and 389 were girls. During the first two years of life, ten girls and one boy (1.4%) had pyelitis. All diagnoses were verified by positive cultures of urine. The condition of six children cleared readily under medical treatment. In one case the symptoms subsided but treatment was not continued to the point of making the cultures of urine negative. The records of another case were incomplete. In two cases abnormalities of the urinary tract were observed. A brief outline of their histories follows:

A boy had had difficulty in urinating since birth, always straining considerably. He was treated for pyelitis at the age of six months; culture of urine at that time showed innumerable colon bacilli. The straining and the infection persisted. At the age of two and a half years, examination revealed the presence of a pyriform tumor in the lower part of the abdomen. Suprapubic cystostomy was done, and the bladder was found markedly dilated. One month later, cystoscopic examination revealed obstruction of the prostatic urethra (stricture or flap). Atony of the bladder and ureteral dilatation were not present. The obstruction was relieved by dilatation of the urethra. However, the suprapubic wound failed to stay closed. The child died at the age of eight years. At post-mortem examination, cystitis, bilateral infected hydro-ureters and hydronephrosis, and generalized peritonitis were found.

A girl had had a large abdomen at birth, with an elastic mass in the right side of the abdomen at times. When the infant was six days old the urine contained many pus cells. Culture of the urine on the tenth day revealed the presence of many staphylococci and colon bacilli. When the child was one year old, cystoscopic examination revealed an atonic bladder, with 180 c.c. of residual urine. The infection persisted, but the child remained free from symptoms, having had no further febrile attacks from that time until she was last seen, at the age of seven years.

Another girl probably had an anomaly of the urinary tract, but this was not proved by urologic examination. She was first seen at the age of twenty-three months. At that time, the urine contained a large amount of pus, and culture of 0.5 c.c. revealed the presence of innumerable gram-negative bacilli. Treatment with methenamine and ammonium chloride was instituted, but was unsuccessful. Alkalinization, and alternate acidification and alkalinization were likewise without effect, the culture of urine remaining positive. At the age of two and a half years, the excretion of phenolsulphonephthalein was found to be 25 per cent. This test was repeated two days later, and was found to be the same. A roentgenogram of the region of the kidneys gave negative results. Cystoscopic examination was advised, but was not permitted by the parents. Since then she has had several bouts of fever, not associated with infection of the upper part of the respiratory tract. In 1930, when the child was six years old, innumerable gram-negative bacilli were found on culture of urine. This culture was taken when she had no fever, and no symptoms referable to the urinary tract. This illustrates convincingly the necessity of making cultures of urine in order to verify the disappearance of infection.

Comment

When compared with the percentages of anomalies of the urinary tract found by several observers at necropsy, 1.4 per cent seems a low incidence for pyelitis, especially when it is noted that in only two cases (0.26 per

cent) of the 773, proved anomalies of the urinary tract were present. It is conceivable that in some cases the anomalies do not cause enough trouble to require treatment, and that in others infection may develop after the second year of life. However, considering the fact that pyelitis is most frequent in children under two years of age, it is probable that a certain number of cases with anomalies is being overlooked by clinicians. This comparison serves to emphasize the importance of careful observation of all cases of infection of the urinary tract, and the necessity of a complete urologic examination of those in which infection recurs or in which the condition does not respond to intensive medical treatment. In order that renal injury may be prevented in cases of chronic urinary infection, medical treatment should not be persisted in beyond a reasonable length of time before resorting to urologic examination. Subsidence of fever and disappearance of pyuria do not mean that the infection has been cured. Treatment should be directed toward making the urine negative bacteriologically.

Summary

The incidence of pyelitis in the first two years of life has been found to be 1.4 per cent in 773 children. Attention is called to the necessity of careful observation of cases of pyelitis which are refractory to treatment, in order to detect the presence of anomalies of the urinary tract.

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2618 *Grove Avenue.*

Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
PRESIDENT-ELECT—*Mrs. W. P. McDowell*, Larchmont, Norfolk.
SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
TREASURER—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

An Appeal to the Doctors.

This month I am making a special appeal to the doctors. We need your help in building up the Auxiliary to the Medical Society of Virginia, so please make your plans now to attend the Convention in Richmond, November 1st to 3rd, and be sure to bring your wives.

We expect to have some speakers of note and many interesting discussions. We hope the doctors and their wives will be so enthused that when they leave Richmond they will determine to organize an auxiliary in all communities where none exists. Our goal is to have at least one auxiliary in each Councilor District in Virginia. When this is accomplished, there will be a better understanding of what scientific medicine is trying to do to raise the standard of health in the state, and also a new bond of service and sympathy will be created between the doctor and the public.

For long years doctors have labored unceasingly to relieve suffering humanity, often without appreciation, and always without publicity or advertising, as the ethics of the profession forbid it, but now through the Woman's Auxiliary there is a perfectly legitimate way to give credit to organized medicine, where credit is due. "The Woman Power of the Nation" is today being recognized by all other professions and industries as a very valuable asset, and why not let the medical profession

have some benefit also. The women are more indebted to medicine for health and happiness than any other class of people, and they are glad to have the opportunity to serve the doctors.

How often our effort to organize an auxiliary is met with the objection that "the town is over-organized already, and there is nothing for the auxiliary to do." The "over-organized" town is the one in which the auxiliary is most needed, and finds its greatest opportunity, for often the most important work is done *through* other organizations, the auxiliary member suggesting and guiding the health work along lines approved by the Medical Society and Public Health Officer. Obviously then, the more organizations a member belongs to, the more personal contacts she has with other women and the wider her influence. A woman with tact and discretion can make the auxiliary a powerful factor for health education in her community. This should be the work of all members and not be left entirely to the Chairman of Public Relations. Any help the doctors give the Auxiliary I am sure will be returned a hundred fold.

To the Members.

Our new National President, Mrs. Freeman, in her address in New Orleans, after enumerating many assests of the Auxiliary, said, "The last and best I offer you is the great prize of happiness. Work in the Auxiliary makes for harmony in the home, and draws the doctor and his wife closer together in a more sympathetic understanding of his cares and responsibilities. We hear much of the inevitable sacrifice of the doctor's wife, only too well known to us all, but what of her rewards? Here again the auxiliary has the answer. Not only does it offer her unrivaled opportunities for the service of humanity, but by that very service, a new bond of sympathy and understanding is created between the doctor and his wife. Again and again do I find mention in the medical journals, from all parts of the country, of the new interest in their husband's work taken by auxiliary members, of their better understanding of the imperative demands made on a physician, of his greater responsibility as his brother's keeper because of his greater knowledge and skill. There is less jealousy of his profession, less resentment at its demands, greater harmony in the home, and the doctors are not slow in voicing their appreciation of this changing attitude."

I send you this message from historic old Buffalo Springs where I am spending my vacation. These Springs date back two centuries. Colonel William Byrd, the founder of Richmond, in his diary tells how he discovered "the Springs on Oct. 7th, 1728, and named it Buffalo from the frequent tokens we saw of that animal. We found the waters excellent, we perceived our appetites to mend and our slumbers to sweeten." From that day the waters have been famous for their health giving properties and through the years Buffalo has increased in popularity. I am glad there is still one place left in Virginia "far from the madding crowd," where one can find rest, quiet and relaxation. The rustling of the wind among the trees, the sweet plaintive notes of the whippowill at evening tide, and the mineral waters, all tend to soothe and heal our overstrained jangling nerves, and restore our serenity of spirit. So I advise you to come to Buffalo if you need a real rest.

Hoping to see every member of the Auxiliary at the Convention in Richmond this Fall.

Faithfully yours,

Mary G. Hodges.

Truth About Medicine

In addition to the articles enumerated in our letter of May 28th, the following have been accepted:

Eli Lilly & Co.
- Ampoule Sodium Amytal 0.25 Gm. (3¾ grains)
- Ampoule Sodium Amytal 0.5 Gm. (7½ grains)
- Ampoule Sodium Amytal 1.0 Gm. (15½ grains)
- Liver Extract No. 343, 110 Gm. bottle

Winthrop Chemical Co., Inc.
- Ampules Luminal-Sodium (Powder) 5 grains
- Capsules Luminal-Sodium, 5 grains
- Luminal-Sodium Tablets, ¼ grain
- Luminal-Sodium Tablets, ½ grain

New and Non-Official Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Suprarenin Solution 1:1,000.—Each 1 c.c. contains suprarenin bitartrate equivalent to suprarenin (New and Non-official Remedies, 1932, p. 187) 0.001 Gm. (1/65 grain). H. A. Metz Laboratories, Inc., New York.

Ampules Suprarenin Solution.—Each 1 c.c. contains suprarenin bitartrate equivalent to suprarenin (New and Non-official Remedies, 1932, p. 187), 0.001 Gm. (1/65 grain). H. A. Metz Laboratories, Inc., New York. (Jour. A. M. A., June 11, 1932, p. 2062).

Foods

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

Cocomalt (R. B. Davis Company, Hoboken, N. J.)—A powdered food for the preparation of table beverages; contains sucrose, skim milk, cocoa, malt extract, whole egg, vanillin flavoring and added vitamin D (irradiated ergosterol). Cocomalt is claimed to be especially intended for the preparation of table beverages with milk, and that it enhances the food value and the flavor of milk. One ounce of Cocomalt is claimed to contain from 40 to 45 vitamin D units (Steenbock).

SMACO (400) Maltose and Dextrins (Spray Dried) (S. M. A. Corporation, Cleveland).—This is essentially a mixture of approximately equal parts of maltose and dextrins. It is claimed to be especially prepared for use as a carbohydrate supplement for the modification of milk for infant feeding.

Recolac (Mead Johnson & Co., Evansville, Ind.)—A food for infants, containing soluble casein (potassium caseinate), lactalbumin, lactose, milk salts, dextrins, maltose, salts, extracts of yeast and wheat embryo, oleo, coconut and cod liver oils; contains vitamins A, B, D and G. It is claimed that Recolac reliquified to normal dilution of 1 ounce of powder+7 ounces of water forms a well-balanced food for infants who are deprived of breast milk, and may be used as a complemental or supplemental feeding.

SMACO (204) Concentrated Liquid Half-Skimmed Milk (Sterilized) (S. M. A. Corporation, Cleveland).—Evaporated half-skimmed milk containing half as much milk fat as ordinary evaporated milk. It is claimed to be intended especially for infant feeding for use wherever an evaporated partially skimmed milk is indicated.

Propaganda for Reform

Strychnine Poisoning.—Strychnine poisoning is rather frequent, and its occurrence is rendered dramatic by the dreadful agony of its course and the commonly fatal termination. Most of the sources of poisoning could be easily avoided especially in the tragic cases of infants. Moreover, the agony of the developed poisoning can be completely eliminated and nearly all fatalities could probably be prevented by proper treatment. The most prolific source of strychnine poisoning is chocolate or sugar coated household laxative or "tonic" pills. The dreadful slaughter from household "remedies" is the more regrettable since it has not been proved that the strychnine in laxative pills serves any useful purpose. Some restriction of the promiscuous sale of this violent poison in the guise of supposedly harmless household remedies is necessary and the board of trustees of the American Medical Association are considering the question of action along these lines. In the treatment of strychnine poisoning, the barbituric acid derivatives have opened a new chapter. They do not differ from the older hypnotics in principle but rather in the combination of high efficiency with relatively high safety, and by the fact that they may be administered intravenously in emergencies such as strychnine poisoning. (Jour. A. M. A., June 4, 1932, p. 1992).

Abortifacient Pastes.—"Interruptin," devised by a Berlin pharmacist, Heiser, and "Provocol," the formula of Dr. J. H. Leunbach, a gynecologist of Copenhagen, are exploited as simple means of performing therapeutic abortions. The Heiser product appears to be secret in composition. Leunbach has published the formula of his paste. This paste, known in Europe as Provocol, is now on the American market under the name "Leunbach Paste." It is claimed that the method can be readily used in the physician's office and the patient return to her home immediately without danger. The claim is made that within thirty-six hours after the injection the uterus generally will empty itself with a moderate amount of bleeding and with little pain, and in a manner that is even smoother than a spontaneous abortion. The preparation Leunbach Paste, now on the American market, is put out by the Vauka Chemical Works, Inc., of Newark, N. J. Foreign medical literature indicates that ideal results from the use of such pastes are obtainable in only about one-fourth of the cases. Within a comparatively short period of time there have recently appeared in German literature reports of twenty-five deaths resulting from the use of these abortifacient pastes. Physicians in this country are now receiving circulars extolling the alleged virtues of Leunbach Paste. The physician is told that the paste is "indicated in spontaneous abortions with retention of the entire, or parts, of the ovum." Such a statement may easily lead to fatalities, the pastes being most dangerous when used in cases where an abortion is in progress and bleeding is taking place. (Jour. A. M. A., June 11, 1932, p. 2155).

Examination of Ethylene for Anesthesia.—V.—When ethylene first came on the market, the Council on Pharmacy and Chemistry requested the A. M. A. Chemical Laboratory to establish standards for this substance. Not only has the Laboratory established suitable standards but, because of the non-official status of the gas, frequent examinations have been made of the market supply of ethylene. Recently there was submitted to the Council a new brand of ethylene. It was deemed advisable at the same time this product was examined chemically to purchase market supplies of the other products described in New and Non-official Remedies. Accordingly, tanks of ethylene for anesthesia were purchased both in Chicago and in Columbus, Ohio. The following brands were examined by the A. M. A. Chemical Laboratory and found to comply in all respects with requirements given in New and Non-official Remedies for ethylene for anesthesia: Cheney, C. L P., Lennox, Puritan, Walco. (Jour. A. M. A., June 18, 1932, p. 2209).

Medicated Corn Plasters.—The Council on Pharmacy and Chemistry reports that so-called medicated corn plasters which are offered for general use by the public contain in general a caustic agent such as salicylic acid as their potent component. The Council feels that the indiscriminate use of corn plasters containing salicylic acid by the public is not without some danger. The public is too prone to consider any lesion on the foot, especially if it is somewhat indurated, as a corn. All types of pathologic conditions on the feet should be seen by the physician and the treatment for these conditions directed by the physician. The Council considers medicated corn plasters to have the status of a drug the indiscriminate and ill-advised use of which by the public should not be encouraged. (Jour. A. M. A , June 18, 1932, p. 2209).

Annual Meeting of the Council on Pharmacy and Chemistry.—The following were among the subjects considered at the annual meeting: The Council instructed the committee in charge of that part of the Intern's Handbook which concerns the Council, to proceed with the preparation of the text for early publication. It was decided that in general the products listed in the chapter on Medicinal Foods in New and Non-official Remedies be transferred to

the Committee on Foods. It was decided to hold iodized table salt suitable for use by the public on its own initiative on condition that it is made to contain a safe proportion of iodine and that iodized salt with a higher percentage of iodine be considered to have the status of a drug. It was decided that although claims for vitamin A as an aid to the establishment of general resistance to infection might be recognized, the evidence does not permit claims for "anti-infective" value in specific conditions. The Council decided that corn plasters and corn cures containing salicylic acid must be held to be therapeutic agents and that their indiscriminate use is not safe. The Council decided to revise the description of Antivenin (Nearctic Crotalidae) in accord with the work of Jackson. It was decided to continue the policy of considering each liver extract individually, so that each manufacturer might be given opportunity to present evidence for the safety of the intravenous administration of his product. It was decided that an investigation of the present status of bacillus acidophilus therapy be carried out. The Council decided to ask the Bureau of Investigation to give further publicity to the hazards from the use of cinchophen. It was decided to revise the New and Non-official Remedies article "Sulpharsphenamine" to emphasize the dangers and limitations of sulpharsphenamine therapy. (Jour. A. M. A., April 16, 1932, p. 1374.)

Mail Order Urine Tests.—The American Medical Association Chemical Laboratory has published a report relative to a urine examining service conducted by Montgomery Ward & Co. Various concerns have endeavored to exploit this plan commercially during the last ten years, but it is, however, a new departure for a mail order organization to undertake such a service. Every physician knows that a mere examination of the urine without a physical examination and without a careful study of the patient in person may be more misleading than valuable, so that even if the urine service were perfect, its utility would still be problematic. When, however, the service is of the character that this one seems to have, it becomes a menace to the user. Since the article on the Univeral Research Laboratories was prepared evidence has become available that the company is actually owned by Warner's Renowned Remedies, a firm which manufactures a goiter remedy, and which deals largely with department stores and mail order houses. (Jour. A. M. A., April 30, 1932, p. 1566.)

Norman Baker vs. The American Medical Association.—Norman Baker, of Muscatine, Iowa, who headed a number of mercantile enterprises, including the ownership of a radio broadcasting station and an alleged cancer cure, was dealt with, editorially, in the Journal A. M. A., of April 12 and April 19, 1930, and in Hygeia for May, 1930. As a result of these publications, Baker brought suit for libel against the American Medical Association, asking $500,000 in damages. This case came to trial in the Federal district court in Davenport, Iowa; the trial opened on February 9th and continued until March 3rd, covering a period of nearly four weeks. On March 3rd, the jury returned a verdit for the American Medical Association. Baker had two (and, for a short time, three) alleged treatments for cancer that were being given at Muscatine in the building that was known as the "Baker Hospital." They were (1) a treatment for "external" cancer, an arsenic powder exploited by Harry M. Hoxsey, and (2) the injection treatment for "internal" cancers of one Charles O. Ozias, of Kansas City. Baker broadcast over his radio station that he was going to investigate a cure for cancer (the Ozias "treatment") and that he "wanted five men or women from any part of the United States or Canada who were suffering from cancer to consent to become a test patient for this treatment. These "test cases" were widely advertised by Baker. Here it may be interpolated that all five of the patients were dead for some time before Baker ceased advertising that "Cancer Is Conquered." Before closing its case, the American Medical Association put in evidence between twenty-five and thirty death certificates of patients who died at the Baker Institute. The Association also submitted seventeen death certificates of Hoxsey victims. During the course of the trial it was brought out that the State of Iowa had enjoined Baker from practicing medicine without a license and that the Federal Radio Commission had revoked Baker's broadcasting license, because it found that his operation of the station was inimical to the public interests. (Jour. A. M. A., March 19, 1932, p. 1012.)

General Decisions of the Committee on Foods.—Chocolate and Cocoa Products: Special recommendations for their use by children are not permissible for foods consisting largely of chocolate or cocoa which contain considerable quantities of theobromine and caffeine. Declaration of Added Salt or Sugar in Sieved Vegetables or Fruits Intended for Infant or Invalid Feeding or For Special Diets: These should be given appropriate and prominent declaration. Gelatin: There is no satisfactory evidence that gelatin increases the digestibility of milk or milk products. "Health Food" Claims: The term "health food" and equivalent claims are misleading. Mastication Claims: Mastication is not an aid to health of teeth and gums. Fruit Juices: Whether liquid, frozen or dried, they shall be prepared and packed to preserve their natural vitamin values. Sulphur Dioxide: Small quantities are permissible in fruit products specially prepared for infants or children. Tonic Claims: The term "tonic" or its inflected forms are not permissible in food advertising. "Sterile," "Sterilized" and "Sterilization": These terms shall be used in food advertising in their correct scientific significance. Vitamin and Mineral Content of Fruits and Vegetables: Sieved fruits or vegetables prepared for the feeding of infants and children shall retain in the highest degree possible these constituents. Vitamin Claims in Food Advertising: Indefinite or general vitamin claims are misleading. Vitamin Content of Tomato Juice: It shall retain in the highest degree possible the vitamin content of the raw juice. Vitamin Fortification of Foods: Tentatively no objection is taken to reasonable fortification. (Jour. A. M. A., March 26, 1932, p. 1087.)

JUST LITTLE THINGS

The little things we give away,
The little deeds we do each day,
The little things we smile and say,
The little games we sometimes play—
All added to the good we do,
Bring joy and cheer to me and you,
With sunshine all the way.

—*Selected.*

Book Announcements

New and Non-official Remedies, 1932, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of The American Medical Association on January 1, 1932. Cloth. Price, postpaid, $1.50. pp. 492, lvi. Chicago: American Medical Association.

The recognition of a preparation for inclusion in this book singles it out from the host of new products of the pharmaceutical manufacturers as being a worthwhile addition to the existing armamentarium of the practicing physician. To be thus distinguished it must be shown, under the impartial scrutiny of the carefully chosen group which is the Council on Pharmacy and Chemistry, that it has acceptable evidence of therapeutic usefulness and that it is marketed in accordance with the honesty and straightforwardness envisaged by the excellent Rules which have been the outgrowth of the Council's quarter century experience in appraising the merits of new drugs.

In accordance with its custom of keeping the annual editions of New and Nonofficial Remedies in the forefront of current medical thought, the Council offers in this volume the newly revised articles: Barbital and Barbital Compounds; Fibrin Ferments and Thromboplastic Substances; Liver and Stomach Preparations; Mercury and Mercury Compounds; and Ovary. Perhaps the most noteworthy new preparations admitted are: nupercaine-Ciba, a local anesthetic; pentobarbital sodium, a barbituric acid derivative; and iopax, a new preparation for roentgenologic use. All of the ovary preparations formerly described are omitted and none of the new standardized preparations are described, although the names Theelin and Theelol are recognized in the revised general article. Another change of importance is the classification of articles formerly listed as "Exempted" under the heading "Accepted but Not Described." There is the usual excellent index and the augmented Index to Proprietaries Not Included in N. N. R.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1931. Cloth. Price, $1.00. pp. 100. Chicago: American Medical Association.

This volume contains the collected reports of the action of the Council on Pharmacy and Chemistry on all products which have been found unacceptable or which have been omitted from New and Nonofficial Remedies during the past year. It contains also the special reports authorized by the Council during the year and preliminary reports on articles which show promise but which are not yet ready for admission to New and Nonofficial Remedies nor suitable for general use by the medical profession.

The preliminary reports on Nucleotide K 96, a preparation of pentose nucleotides which has shown promise in the treatment of leukopenia, and on Carbarsone, p-carbamino-phenyl arsonic acid, proposed for use in amebiasis but needing further confirmatory evidence of value, are both timely and interesting.

Perhaps the most noteworthy are the special reports, The Intravenous Use of Barbital Compounds and The Average Optimum Dosage of Cod Liver Oil. The former gives the Council's considered verdict on the dangers and limitations of the use of barbitals intravenously and the latter gives the result arrived at from a questionnaire sent to leading pediatricians.

A Survey of Prehistoric Sites in the Region of Flagstaff, Arizona. By HAROLD S. COLTON. Smithsonian Institution. Bureau of American Ethnology. Bulletin 104. United States Government Printing Office. Washington, D. C. 1932. Octavo of 68 pages. Illustrated. Paper. For sale by the Superintendent of Documents, Washington, D. C. Price, 30 cents.

Menominee Music. By FRANCES DENSMORE. Smithsonian Institution. Bureau of American Ethnology. Bulletin 102. United States Government Printing Office. Washington, D. C. 1932. Octavo of 230 pages. Illustrated. Paper. For sale by the Superintendents of Documents, Washington, D. C. Price, 80 cents.

Hospital Service in the United States. 1932. The 1931 Census of Hospitals. Eleventh Presentation of Hospital Data by the Council on Medical Education and Hospitals of the American Medical Association. Reprinted from the Hospital Number of the *Journal of the American Medical Association.* June 11, 1932. Price, 50 cents.

As we grow older, and the shadows begin to lengthen, and the leaves which seemed so thick in youth above our heads grow thin and show the sky beyond, and as those in the ranks in front drop away, and we come in sight, as we all must, of the eternal riflepits beyond, a man begins to feel that among the really precious things of life, more lasting and more substantial than many of the objects of ambition here, is the love of those he loves and the friendship of those whose friendship he prizes.—*Henry Cabot Lodge.*

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Editorial

The Role of the Streptococci.

A justification for an editorial comment on a subject as large and complex and as unsettled, as that suggested in this caption, is in the possibility that the busy practitioner may find therein some review of an important subject in many medical problems. As the consideration of arthritis brings up the question of its possible etiology and relationship to streptococcus action, it may be refreshing to note what important bacteriologists write on the role of the streptoccci in general. Hans Zinsser in the 1928 edition, Textbook of Bacteriology, serves as an authority for such comments.

The streptococci that give rise to disease processes in animals and in man, because of their frequent association with suppurative inflammations, are classified in a group as streptococcus pyogenes. This group of streptococci are, further, divided into the hemolyticus or hemolyzing variety and the viridans or non-hemolyzing variety.

The streptococcus hemolyticus is the more virulent group and forms an important source of serious acute diseases in man. Man's resistance to these micro-organisms is, however, an important factor in the degree and violence of the pathological processes set up. For instance, a superficial cutaneous infection may be mild in effect and resolve itself into localized abscesses. Under conditions of lowered vitality or resistance, such infections by this organism may be followed by rapidly spreading edema, lymphangitis, and severe systemic symptoms; danger to the life of the patient may be serious, if not mortal. Likewise suppuration of the bone by streptococci makes a severe osteomyelitis. When such infection occurs in the mastoid bone, fatal meningitis often occurs. Meningitis of streptococcic origin, although rare, may be seen in bronchopneumonia and influenza. Then, an erysipelas streptococcus hemolyticus, sometimes called streptococcus erysipelatis, locates in the crevices of tissues and lymph channels of the skin. In what one knows as Ludwig's angina, streptococcus hemolyticus produces a violent acute inflammatory process of areolar tissue of the submaxillary region of the neck. Most frequently in general practice, physicians have to deal with this micro-organism, streptococcus hemolyticus, in infection of abrasions, cuts and wounds. Not infrequently, physicians, surgeons, pathologists, and medical students have been seriously infected through accidental puncture wounds in dressing infected wounds, in operating, in making post mortem examinations and work in the dissecting halls. A mere prick of the finger, a break in the skin may be the point of infection; looking very inconsequential at the time, it may culminate in general infection.

Physicians in obstetrical practice have ever in mind the danger of puerperal sepsis. This most dangerous of infections is caused by streptococcus hemolyticus, although streptococcus viridans is also a less tragic actor in this malady.

In the mouth and throat of normal people, hemolytic streptococci reside and in this con-

nection, one finds severe forms of follicular tonsillitis, with its high temperature and severe symptoms of swelling of the tissues of the throat and neck. Streptococcus throat infection may bring swift and malignant symptoms and death. So in scarlet fever, streptococcus hemolyticus produces its severe throat angina, its rash, its cardiac and nephritic complications. In smallpox, diphtheria, measles, and influenza, blood cultures have revealed streptococcus hemolyticus as secondary invaders. In the World War among soldiers, streptococcus bronchopneumonia acted in epidemic fashion and proportions. Then too, in epidemic sore throat, due to milk infection, streptococcus plays an etiologic part—probably originating in mastitis of dairy cows.

Now, streptococcus viridans, so called green streptococcus, is non-hemolytic and produces less severe and more subacute lesions. This organism is frequently associated with tooth infections, middle ear disease, and infections of the accessory sinuses of the nose and sometimes found in crypts of chronic tonsillar infection. It is streptococcus viridans that is associated with subacute vegetative endocarditis. In vegetative growths on the valves, usually mitral, sometimes aortic, this organism produces its pathologic process. Streptococcus viridans can be readily cultivated from the blood stream because there it remains for weeks and months. It is a slow process; the patient's resistance may remain well sustained for a long time, but after months, resistance gradually wears down and death ensues. From such vegetations, emboli may be passed by the blood currents to the brain vessels, the kidneys or elsewhere.

Streptococcus viridans and rheumatism are tied together through much research work and clinical inquiry. Hans Zinsser's consideration in his 1928 edition says, "enormous amount of rather confusing work has been done upon the etiology of rheumatism from this point of view." He points out Poynton and Paine's work. Zinnser describes briefly Rosenow's claims; he points out the evidence in which Swift and Kinsella fail to obtain a verification of Rosenow's findings. Yet, says this bacteriologist, the association of acute rheumatism with streptococcus throat infection and valvular heart disease with rheumatism are so clinically related by experience that their association cannot be lightly dismissed.

Finally, the opinion is given that certain varieties of rheumatism are narrowed down to two etiologic possibilities, namely (1) "that actual injury of the joint is caused by a toxic factor something like the Dick poison which penetrates to the synovia; (2) that the body becomes allergic to the streptococcus materials and that a localized allergic reaction in the joints accounts for the lesions." In both a necessary concomitant disturbance of capillary circulation occurs.

Intravenous Vaccine in Chronic Arthritis.

Chronic arthritis is a disease more or less present in the practice of every general practitioner. The disease is one of world wide interest. Its deforming and crippling effects have affected the human race through the ages. Attacked in joint mechanisms of the body, the patient becomes handicapped and deformed. Normal locomotion and movements of the body are abridged. When effort is made to move, pain and distress are experienced. Deformity and distortion of articulating bone surfaces bring the body to a state of semi-invalidism and ill health. To prevent such a terminal catastrophy and to thwart such laming and handicapping symptoms in arthritis has been one of the master problems of medical inquiry through the years.

From the days of suggested relation of oral focal infections to systemic rheumatic symptoms, to the present time, a large amount of experimental work has been done and publication of such work and clinical observations has been made on the treatment of arthritis. Our readers, therefore, may add to their reading on this subject by noting what Clawson and Wetherby* report as their experience in experimental considerations and in the therapeutic results obtained in patients with chronic arthritis by the use of an intravenous vaccine. One in practice, both urban and rural, may attend with peculiar interest a report of this sort that is given the profession, it being submitted after subjecting 301 patients to this therapy. In addition to the summary of their work, the authors cite a group of papers and publications as reference, on which their discussion is based. In the list, one finds well known authors who have contributed largely to the general knowledge of the etiology and treatment of arthritis. We find there Billings, Rosenow, Swift, Baer, Poynton and Paine, and Cecil and other workers.

Clawson and Wetherby draw attention to

*Annals of Internal Medicine, June, 1932, page 1447.

the fact that positive streptococcic cultures have been obtained by many workers (cited). The average percentage of positive streptococcic cultures were as follows: blood 35 per cent, joint fluids 35 per cent, joint tissues 44 per cent, lymph nodes 61 per cent, and subsutaneous nodules 72 per cent. Of 1,297 cultures, 520 (40 per cent) were positive for streptococci. Later workers, say these authors, have raised these percentages. Streptococcus viridans, in the main, is the most constant organism, although atypical hemolytic streptococci were found.

Pathologic processes described were cellular reactions in the joint capsules and membranes. Polyblastic changes of the tissues of the joints like those described by Swift in joint lesions of acute rheumatic fever were noted. The authors observed subcutaneous nodules in 30 per cent of a series of 300 cases of chronic arthritis. They felt that bacteriological, immunological and pathological evidence obtained tended to support the thesis of the etiologic relationship of the streptococcus to chronic arthritis.

The authors attempted to see what could be done in relieving and curing chronic arthritis by vaccination. They set up three necessary requirements in vaccination for chronic arthritis: (1) not to make the patient hypersensitive to the protein in the vaccine; (2) to desensitize the patients who are already hypersensitive and (3) to bring about a high degree of protective immunity. A series of animal experiments in rabbits were performed. These lead to the conclusion that intravenous injections of streptococci met with the preceding requirements, but that subcutaneous injections did not. These workers conclude, that "streptococcic desensitization and protection are species specific but not type specific and that they are not brought about by a non-specific protein reaction." They found that about 80 per cent of patients with chronic arthritis, who received five or more intravenous injections of a streptococcic vaccine, showed definite clinical improvement and that the results obtained "seem to justify the further study of such treatment."

Vitamin B.

The last word has not been said on the subject of vitamins in human food. Much has been learned, however, within the last decade, that offers fair promise of increasing popular knowledge on the growth, conformation, good health, vitality, strength, endurance, stamina, and like "ponderables" and "imponderables" of the human body.

Blights in the body growth and health of the people of the earth have marked through human history the deficiency of vitamins in the food. Dwarfed growth, malformed skeletal structure, distortion of the muscle structures of the body, doubtless unresisted spread of plagues, epidemics and other ghastly-like stigma, have haunted the evolution of the human body in the ages of the past, in every land and country—brought about, in no inconsiderable degree, by the deficiency of the food factors in daily rations. May doctors not see this between the lines as they peruse the story of diseases of man—such as rickets in babies and youth, the pellagrous blight of natives of northern Italy and our Souther states; in the beriberi of the yellow races in the East; and the scurvy of the weakened, anemic, hemorrhagic, spongy-gummed mariner sailing the seven seas of the past.

Practitioner must come to know that the need of a knowledge of vitamins in the diet of the young growing body, as well as the mature, has arrived. By a failure to grasp the knowledge as far as obtained as a working basis in daily practice, one will be unprepared to deal properly with the ever increasing problems of diet and disease of present-day practice. This urgent need does not rest alone upon the pediatrician in handling his little patients with rickets and undergrowth but it rests upon the whole profession. If one group of physicians should know this subject better than another, one should name the general practitioner in the country and cities. So, it is under the appeal of this subject that editorial comment is again brought to our readers to note with interest the series of articles now appearing under the supervision of an authorized Committee of the American Medical Association in the *Journal* of that Association.

Last month in these columns, attention was given vitamin A, and now we wish briefly to generalize on the vitamin B as a factor of human diet, using a special article by the Committee, vol. 98, no. 26, page 2282, as a reference for comment.

Seen and unseen avitaminosis in the human body requires comment. Obvious signs of deficiency are easily recognized. Disease entities such as rickets, scurvy, pellagra, and beriberi,

as they advance to their terminal stages of destruction, are, of course, recognized, and active therapeutic measures administered to check such maladies. But much avitaminosis exists unrecognized in the patients and clientele of every practitioner. This is true in the sick in the homes and hospitals and in the undernourished population of the country.

Anorexia appears to have a relationship to vitamin B. Loss of appetite, a loss of the normal urge to take food daily in sufficient quantity to carry on body-building and body-strength is always important. But in the marasmic baby, in the poorly nourished and emaciated patient, such a loss of function means a great deal. Cowgill, for illustration, gives Newburgh's experience "in increasing the voluntary food intake of a mentally incompetent young woman from about 400 to approximately 2,000 calories a day by the simple expedient of administration of vitamin B." It seems obvious that all conditions evidencing signs of malnutrition and undergrowth, and such general clinical signs, may be placed in the category of avitaminosis and may be thought of as needing vitamin B in particular.

Restriction of growth is another feature brought out by Cowgill. The place of vitamin A and calcium and vitamin B is difficult to assign in this feature of malformation, but it is a general opinion in the growth of children that vitamin B plays an important part. As growth of the body proceeds, the adequate intake of the vitamin B in the diet of the young increases in importance.

The foods and sources of vitamin B should be known to every practitioner. Tables and lists containing this information are at hand. In general, one may remember that cereals of wheat germ and yeast serve as excellent sources of vitamin B. Among meats, liver, kidney, brain and muscle are important sources of vitamin B; in vegetables, tomatoes, fresh spinach, cabbage and legumes, while oranges, lemon juice, onions, lettuce and cauliflower have vitamin B to a lesser degree. In the yolk of egg, milk and in special concentrates of vitamin B, physicians may find a source of this antineuritic vitamin that may be needed in the patients and in the school children and in the underfed marasmic baby.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

New Courses in Prenatal and Postnatal Care.

The Northampton and Accomac County Medical Societies, at meetings held separately on July 6th, have voted to approve a two-weeks course on the Eastern Shore, August 8th to 19th, under the instruction of Dr. Maxwell E. Lapham, Field Clinician of the Joint Committee on Prenatal and Postnatal Instruction. The course will begin in the Northampton-Accomac Memorial Hospital at Nassawadox.

The number required for the organization of the class has been secured by the enrollment of the following physicians: In Accomac County, Drs. C. E. Critcher, O. R. Fletcher, D. L. LeKites, A. A. Matthews, B. N. Mears, John W. Robertson, R. J. White and A. F. Wood; in Northampton, Drs. S. K. Ames, J. G. Goode and J. M. Lynch.

More than a dozen other physicians have expressed their interest in the course and an enrollment of about twenty is expected.

The full time of the Field Clinician will be devoted to the work of post-graduate instruction in prenatal and postnatal care in any ways that are desired. His services are offered to physicians for the examination of patients in their own offices as a means of emphasizing the instruction in a practical way. He will see patients only upon the recommendation of members of the medical societies and communicate with them only through the patient's physician. The Joint Committee invites members of the class to make free use of all the time and skill Dr. Lapham can put at their disposal.

Increasing use of Dr. Lapham's out-of-class hours in conference with physicians is taking place in the first circuit of the course, which comes to an end on August 5th. The enrollment for these five centers has increased to seventy-nine through the addition, since the report of last month, of Dr. R. L. Taliaferro, Madison Mills, in the Charlottesville class; Dr. Walter Williams, Brookneal, in the Lynch-

burg class; Dr. W. A. Jeffress, Fairfield, in the Lexington class; and Dr. M. T. Vaden, Buena Vista, in the Lexington class.

The attendance has maintained the same high rate as in the beginning and favorable comments have in no degree diminished.

Proceedings of Societies

Virginia State Board of Medical Exominers.

There were only two failures in the 113 applicants to practice medicine in Virginia who took the examination given by the State Board at its June, 1932, session. Eighteen doctors were granted certificates by recriprocity.

Following is a list of the succesesful applicants:

Dr. Lester W. Archambeau, Washington, D. C.
Dr. Nathaniel T. Ballou, Jr., Richmond, Va.
Dr. Henry Louis Bastien, Washington, D. C.
Dr. Milton Hamlin Bland, Crewe, Va.
Dr. Nathan Bloom, Richmond, Va.
Dr. Benjamin D. Bosworth, Portsmouth, Va.
Dr. Samuel Allen Brown, Washington, D. C.
Dr. Holmes Gantt Byrd, Richmond, Va.
Dr. James Lawson Cabaniss, Bedford, Va.
Dr. Hawes Campbell, Jr., Richmond, Va.
Dr. Jack Leon Cantor, Petersburg, Va.
Dr. Willard Cardwell, Richmond, Va.
Dr. Hill Carter, III, Ashland, Va.
Dr. Stephen R. Casagrande, Richmond, Va.
Dr. Richard Colbert Cecil, Bramwell, W. Va.
Dr. Austin Brockenbrough Chinn, Warsaw, Va.
Dr. Thomas S. Claiborne, Greenwood, Miss.
Dr. Robert R. Coleman, Norfolk, Va.
Dr. Harold B. Damron, Clintwood, Va.
Dr. Frank D. Daniel, University, Va.
Dr. Hal Davis, Roanoke, Va.
Dr. J. Walter Davis, Jr., Hampton, Va.
Dr. Martin D. Delaney, Jr., Alexandria, Va.
Dr. George H. Derieux, Jr., University, Va.
Dr. Walter A. Derrick, Pulaski, Va.
Dr. Murray Dick, Newport News, Va.
Dr. Patrick H. Drewry, Jr., Petersburg, Va.
Dr. H. Rolfe DuPuy, Washington, D. C.
Dr. Charles A. Easley, Jr., Chatham, Va.
Dr. Joseph A. Eason, Richmond, Va.
Dr. Henry M. Escue, Roanoke, Va.
Dr. Perfecto A. Espejo, Washington, D. C.
Dr. Thomas G. Faison, Raleigh, N. C.
Dr. Rodolfo F. Fasoli, Richmond, Va.
Dr. Frederick L. Finch, Jr., Richmond, Va.
Dr. Rodolph H. Fowlkes, Chatham, Va.
Dr. Clarence D. Freeman, Jr., Portsmouth, Va.
Dr. Oscar H. Fulcher, Welch, W. Va.
Dr. Chase Gray Gage, Cambridge Springs, Va.
Dr. Earle C. Gates, Highland Springs, Va.
Dr. Alexander G. Gilliam, University, Va.
Dr. James Massie Gleason, Richmond, Va.
Dr. Cornelius E. Gorman, Lynchburg, Va.
Dr. Emanuel Greenspon, Newport News, Va.
Dr. John William Griffis, Natural Bridge, Va.
Dr. Randolph D. Grinnan, Jr., Norfolk, Va.
Dr. Robert E. Harris, Richmond, Va.
Dr. John Hartwell Harrison, Danville, Va.
Dr. James B. Hawes, University, Va.
Dr. Richard S. Herring, Richmond, Va.
Dr. Robert B. Hightower, University, Va.
Dr. Robert B. Hillsman, Teaneck, N. J.
Dr. Leland F. Hobbs, University, Va.
Dr. Robert T. Humphries, Culpeper, Va.
Dr. William D. Jarman, Farmville, Va.
Dr. Lewis E. Jarrett, Richmond, Va.
Dr. Robert W. Johnson, Lynchburg, Va.
Dr. Jean B. Jones, Petersburg, Va.
Dr. Edgar W. Kirby, Jr., Portsmouth, Va.
Dr. Allen W. Lane, Tarboro, N. C.
Dr. Winston T. LaNeave, Jr., Richmond, Va.
Dr. Herman Lenowitz, Shawsville, Va.
Dr. Sydney Levy, Richmond, Va.
Dr. Robert F. Martin, Faber, Va.
Dr. Everette W. McCauley, Richmond, Va.
Dr. John C. McCluer, Jr., University, Va.
Dr. Melvin W. McGehee, Orange, N. J.
Dr. Andrew N. McLaughlin, Richmond, Va.
Dr. Thomas S. Meade, Philadelphia, Pa.
Dr. Robert S. Millen, Westbury, N. Y.
Dr. John H. Miller, Richmond, Va.
Dr. Phillip L. Miller, Norfolk, Va.
Dr. Walter L. Nalls, Alexandria, Va.
Dr. Beverly W. Nash, Baynesville, Va.
Dr. Charles M. Nelson, University, Va.
Dr. Alfred M. Palmer, McLean, Va.
Dr. Ralph W. Pence, Ashland, Va.
Dr. J. Randolph Perdue, University, Va.
Dr. Walter A. Porter, Roanoke, Va.
Dr. Stanley H. Powell, Portsmouth, Va.
Dr. Younger L. Power, Hazleton, Pa.
Dr. Albert T. Repass, Richmond, Va.
Dr. John E. Roberts, University, Va.
Dr. Euston S. Robertson, Alcoma, Va.
Dr. William M. Robinson, Richmond, Va.
Dr. Elizabeth L. Saunders, Charlottesville, Va.
Dr. Wade H. Saunders, Roanoke, Va.
Dr. Charles Neill Scott, Richmond, Va.
Dr. Robert Scully, Teaneck, N. J.
Dr. Lacy L. Shamburger, Richmond, Va.
Dr. Francis T. Sharpe, Washington, D. C.
Dr. Edward S. Silvera, Jr., Washington, D. C.
Dr. John P. Snead, Jr., Charlottesville, Va.
Dr. Francis A. Snidow, University, Va.
Dr. Wilson T. Sowder, Rocky Mount, Va.
Dr. Hugh Otto Staley, University, Va.
Dr. Thomas E. Stanley, Beaverdam, Va.
Dr. Charles T. St. Clair, Jr., Bluefield, W. Va.
Dr. Frank A. Strickler, Bridgewater, Va.
Dr. George T. Tanner, Brightwood, Va.
Dr. Lee Barnhardt Todd, Richmond, Va.
Dr. George D. Vermilya, Clifton Forge, Va.
Dr. Robert J. Walker, Jr., Tarboro, N. C.
Dr. Karl K. Wallace, Farmville, Va.
Dr. Delmar F. Weaver, Orange, Va.
Dr. William L. Weaver, Front Royal, Va.
Dr. Hugh G. Whitehead, Jr., Norfolk, Va.
Dr. William D. Wilkins, Birmingham, Ala.
Dr. James M. Winkfield, Richmond, Va.
Dr. Mumford Radford Yates, University, Va.
Dr. Joseph E. Young, Jr., Greensboro, N. C.

The Northampton County Medical Society

Met on July 6th, at Eastville, Va., for its regular quarterly meeting.

After a delicious dinner served at the hotel, the Society went into its scientific and business session. Dr. Waverly Payne, of Newport News, guest speaker, presented an interesting and instructive paper on "The Toxemias of Pregnancy" in which he emphasized the importance of consistent preventive prenatal care and the conservative treatment of all cases.

The Society endorsed the plan of Prenatal and Postnatal Instruction made possible by the Commonwealth Fund through the Medical Society of Virginia.

Delegate and alternate were appointed to the meeting of the Medical Society of Virginia in November.

Dr. H. L. Denoon, Nassawadox, is president of this Society, and Dr. W. Carey Henderson, Nassawadox, is secretary.

News Notes

Members of the State Society Invited to Richmond in September as Well as November.

The places for meetings of the State Society have been arranged. The two night convocations will take place in the Auditorium of the John Marshall Hotel, while the daytime sessions will be held at the new home of The Richmond Acadamy of Medicine, at 12th and Clay Streets, which will also house the offices of the Medical Society of Virginia.

Apropos of the above announcement, it will be of interest to members of the State Society, living outside of Richmond, to learn that the Academy's new building will be officially opened on Tuesday, September 20, 1932. At this time the Miller Library will be fittingly dedicated.

A buffet dinner will precede the dedicatory exercises. Dr. E. H. Cary, of Dallas, Texas, President of The American Medical Association, and Dr. Francis R. Packard, of Philadelphia, Editor of *The Annals of Medical History*, will officiate as guest speakers.

Members of the State Society are cordially invited to attend this function.

The Question Box.

In the letters sent all members, the last of June, with regard to the Richmond meeting of the Medical Society of Virginia, it was stated that, if sufficient interest is shown, we plan to have a "Question Box," the questions to be answered at a set time during our annual meeting. This is an innovation and we hope many members will avail themselves of its advantages. The gift of speaking and writing is not a common art, but we all wish information on some subject, from time to time. Several questions have already been received. Those sending the questions should arrange to attend the session at which it is announced the questions will be answered. Questions should be in the Secretary's hands by September 1st on a postal or in letter form and *they do not have to be signed* unless you so desire.

Married.

Dr. Roshier W. Miller and Mrs. Sallie Knight Hill, both of Richmond, Va., July 6th.

Dr. Hugh B. Brown, Jr., Draper, Va., and Miss Mary Jones, Bristol, Tenn., February 23rd. Dr. Brown graduated from the Medical College of Virginia in 1931 and has served the past year as interne at the George Ben Johnston Memorial Hospital in Abingdon, Va. He has located at Draper, Va., for the practice of general medicine.

Dr. Thomas Meredith Winn, Covington, and Miss Violet Gary, Kenbridge, June 30th.

Dr. J. Earle Wheeler, Belleville, Ill., and Miss Catherine Louise Davis, Beloit, Wis., June 18th. Dr. Wheeler is a graduate of the University of Virginia, Department of Medicine, in 1926.

Dr. Frederick Lionel Finch, and Miss Melba Mayhew Gravely, both of Richmond, Va., June 23rd. Dr. Finch is a graduate of the Medical College of Virginia, class of '32.

Dr. Jack Grizzard and Miss Ruth Corinne Cleek, Hot Springs, Va., June 22nd, in Richmond, Va. Dr. Grizzard is a graduate of the Medical College of Virginia in 1932 and is serving an internship at the N. C. Baptist Hospital, Winston-Salem, N. C.

Dr. Delbert T. Saffer, Aldie, Va., and Miss Martha Garnett Gresham, Newport News, Va., May 15th.

News Notes from the Medical College of Virginia.

The Carnegie Corporation, New York City, has made a grant of $1,600.00 to be applied toward the development of the dental school library.

The second postgraduate clinic for Negro physicians was held June 20th-July 2nd. Eighteen physicians registered, twelve of whom attended the first clinic, and six were new matriculates. The course covered work in medicine, pediatrics, obstetrics, surgery and dermatology. Those who attended the clinic were quite enthusiastic about the work. Members of the faculty of the college conducted the clinic which was financed by the General Education Board of New York. Dean Numa P. G. Adams and Dr. H. A. Calis, both of Howard University, each gave a special lecture during the clinic course.

Dean Wortley F. Rudd of the school of pharmacy of the college spoke on Pharmaceutical Education at the joint meeting of the Virginia and West Virginia State Pharmaceutical Associations held at White Sulphur Springs, W. Va., June 20th-22nd. This was the first joint meeting of the two associations and celebrated the Silver Anniversary of the West Virginia Association. Dr. W. G. Crockett of the school of pharmacy had charge of the section on commercial interests. The next meeting of the two associations will be held at Old Point Comfort, Va.

During the meeting of the Virgina Academy of Science, held at Hollins College, April 21st and 22nd, the following papers were read by members of the college faculty:

The Treatment of Acute Arsenic Poisoning, W. R. Bond, Associate Professor of Physiology and Pharmacology.

Pharmacological and Toxicological Observations on Neonicotine, H. B. Haag, Associate Professor of Physiology and Pharmacology.

The Use of Nupercaine for Infiltration and Conduction Anesthesia in Exodontia, R. J. Main, Assistant Professor Pharmacology and Physiology, and V. R. Trapozzano, Assistant in Prosthetic Dentistry.

Actinomyces Necrophorus Infections in Man, Frederick W. Shaw, Professor of Bacteriology and Parasitology.

The Occurrence of a Calcerous Arterial Lesion in Goiter, Lewis C. Pusch, Associate Professor of Pathology.

Chemistry Related to Feeblemindedness and Epilepsy, Sidney S. Negus, Professor of Chemistry, and Beverley R. Tucker, Professor of Nervous and Mental Diseases.

An unprecedented increase in service by the out-patient department of the hospital division of the college is revealed by the statistics for the fiscal year which closed July 1, 1932. During the year 55,139 patient visits were made to the out-patient department, 13,016 more visits than last year, or an increase of 31 per cent. During the past six years the work of this department has increased 136 per cent. In the year just closed the clinic was open 303 days caring for an average of 181 patients a day. The largest number in any one day was 294 and the smallest number seventy-nine. Of the total patients handled last year less than one-half were able to pay anything toward the bare cost of the service rendered. There were 8,229 new patients who had not visited the clinic before.

News Notes from the Duke University School of Medicine and Duke Hospital.

On June 20th, the summer quarter of the medical school commenced with eighteen students registered in the second year class, twenty-five in the junior and twelve in the senior class. Fifteen students are taking work at other medical schools this quarter, for which they will be given credit here.

Seven of the eighteen students who graduated in June are serving interneships at the Duke Hospital, four are in hospitals in Baltimore, one in Atalanta, two in McKeesport, Pa., two in Worcester, Mass., one in Rochester, N. Y., and one at the Watts Hospital, Durham.

On June 10th, one hundred and fifty Duke Hospital nurses moved into the new nurses' home, which was recently completed and has accommodations for about two hundred.

Health Education Institute.

The first Institute on Health Education to be conducted by the Public Health Education Section of the American Public Health Association will be held at the Hotel Willard, Washington, D. C., October 22, 23 and 24, 1932, immediately preceding the Annual Meeting of

the Association, which opens Monday, October 24th.

The purpose of the Institute is to provide instruction in the content and methodology of Health Education to a limited number of persons actively engaged in Health Education. The students whom it is desired to attract to the Institute, may or may not have had training in Health Education in one or the other of the very few institutions where it is available. They may have had a little or considerable experience.

Additional information may be secured from the American Public Health Association, 450 Seventh Ave., New York.

American Public Health Association.

The sixty-first annual meeting of this Association will be held in Washington, D. C., October 24th-27th, with headquarters at the Willard Hotel. The American Social Hygiene Association, American Association of School Physicians, International Society of Medical Health Officers, Conference of State Laboratory Directors, Conference of State Sanitary Engineers, and the Association of Women in Public Health, will also hold their conferences in Washington at or about the same time.

Public health workers are urged to make their hotel reservations early so that they will be assured of adequate accommodations.

Dr. Roy K. Flannagan,

Assistant State Health Commissioner, returned on July 1st from a two weeks' cruise to Nassau in the Bahamas, Miami, Florida, and Havana, Cuba, and return over the same route. He was accompanied by Mrs. Flannagan, and they report the most enjoyable vacation of their experience. They sailed on June 18th from New York on the steamship *Munargo* of the Munson Line, and were back in New York on the morning of July 1st. Two or more days were spent at each point touched.

Nassau, the seat of the Government of this portion of the British Dominions, is located on New Providence, one of the smaller islands of the Bahama Archipelago. It has the most beautiful bathing beach to be found anywhere, and its wonderful sea-gardens viewed through a glass bottomed boat are worth taking the trip to see. Many would be interested in the signs found on almost every other store "licensed to sell wines and liquor." Nassau was formerly the headquarters of the notorious Blackbeard and other pirates of a hundred or more years ago. Now it is the headquarters, so it is said, of the Atlantic Coast bootlegging industry. The city has undoubtedly profited by the 18th Amendment. Dr. Flannagan reports that his style was somewhat cramped both at Nassau and Havana by his previous prohibition record. He was much impressed with the beauty of Havana from the sea and with its old world aspect on closer acquaintance. Old Spain was met with on every hand and something unfamiliar and interesting at every turn.

The contrast afforded by Miami, Florida to each of the two foreign ports visited he reports was most striking, and tended to stimulate a greater appreciation of the advantages of the United States as a place of residence. Dr. Flannagan's statement that he has experienced much hotter weather since he returned than at any time on his trip should encourage more Virginians to take this cruise, which is most reasonable in cost.

Dr. J. B. James Has Received Appointment to American Hospital of Paris.

The appointment of Dr. John Bruce James, of Danville, as interne at the American Hospital of Paris has been announced by the Medical Advisory Board of this hospital in America. The service begins April 1, 1933, and continues for one year.

Dr. James was graduated from the Medical College of Virginia with the class of 1931, and then served a year on the resident staff at Johnston-Willis Hospital.

The American Hospital of Paris is located in Neuilly-Sur-Seine, a suburb of Paris. It was founded by American residents and physicians to provide a suitable place for the treatment of Americans traveling or living abroad.

The main building which maintains 120 beds was officially opened in 1926 as a memorial to the men and women of the American Hospital who had rendered such excellent service during the war. This memorial building was erected and equipped at a cost of approximately $1,000,000.

Four internes are selected each year, all from this country, by the Medical Advisory Board of America, and it was through Dr. Beverley Randolph Tucker, a member of this Board that Dr. James' appointment was obtained.

After a period of three months devoted entirely to the American Hospital each interne

is given the opportunity for work in the various Paris Hospitals and Clinics.

The Hospital is for the exclusive treatment of American patients, except in certain contingencies, but many donations are received from the French. The Medical Staff consists of both American and French physicians.

Nurses from any country are eligible for application and are chosen on their merit following examinations. A knowledge of the English language is required of all nurses.

Dr. James Asa Shield now practicing in Richmond and Dr. Giles Sydnor Terry now practicing in New York, and both Virginians, were former residents in the American Hospital of Paris.

Dr. James is interested in Neuropsychiatry and Endocrinology and will devote most of his time to these subjects while in Europe.

Dr. Edgar W. Young,

Petersburg, Va., has been awarded the Purple Heart Medal on account of wounds received in action, November, 1917.

New Pavilion at Pine Camp.

A new two-story pavilion at Pine Camp Sanatorium, Richmond, Va., has recently been completed. This building will house between seventy-five and eighty patients. The first floor contains screened-in porches, with radio head-phones at each bed, individual patient rooms, a diet kitchen, a helio-therapy room, dressing rooms and lavatories. On the second floor are the operating room, a dentist's office, fully equipped, nurses's chart rooms and bathrooms.

The funds provided for this work also allowed for a new administration building and for the remodeling of an old two-story residence which has been converted into a home for the nurses on the staff.

Joins Staff of Grace Hospital.

Dr. Eugene L. Kellum, formerly of the Mayo Clinic, has recently been added to the staff of Grace Hospital, Richmond. He will be in the Department of Internal Medicine. Dr. Kellum received his M. D. degree from the University of Pennsylvania and his M. S. degree in internal medicine after serving six and a half years at the Mayo Clinic.

West Virginia State Medical Association.

At the annual meeting of this Association in Parkersburg, in June, Dr. D. A. MacGregor, of Wheeling, was unanimously elected its president to succeed Dr. Albert H. Hoge, of Bluefield. The two vice-presidents for this year are Drs. James McClung, of Richwood, and T. L. Harris, of Parkersburg. Mr. Joe W. Savage, of Charleston is executive secretary. Charleston was selected for the place of meeting in 1933.

Dr. F. Waring Lewis,

Richmond, Va., announces the opening of his offices in the Professional Building. He will limit his practice to diseases of infants and children.

Dr. H. I. Amory

Has recently located at Phoebus, Va., where he will be engaged in general practice. He is a member of the class of '31 of the Medical College of Virginia and served his internship at St. Vincent's Hospital, Norfolk.

Dr. C. H. Armentrout,

Of the class of '31, Medical College of Virginia, has recently located at Flint Hill, Va., where he will be engaged in general practice. He has just completed an internship at Memorial Hospital, Richmond.

Hay Fever Clinic.

Due to the increased demand of people sensitive to hay fever pollens and allied diseases, the New York Polyclinic Medical School and Hospital has enlarged this department to meet their needs. Clinics are held every morning from nine-thirty to eleven o'clock.

Dr. P. W. Miles,

Danville Va., announces removal of his offices to 614 Holbrook Avenue, that city.

Dr. J. N. Higginbotham,

Tazewell, Va., is taking "the cure" at West Baden, Ind.

Dr. S. T. A. Kent,

Ingram, Va., was recently honored by the people among whom he has labored for a half a century, when several hundred people of that community gathered in the grove at the local church for a meeting held in his honor.

Dr. Hugh H. Trout,

Of Roanoke, Va., addressed the Danville-Pittsylvania Academy of Medicine at its May meeting on "The Surgery of Pulmonary Tuberculosis."

The Covington General Hospital

Has recently made a number of alterations, increasing its capacity by ten beds, providing new operating rooms and a roof garden. Dr. W. Preston Burton is physician in charge.

Major B. B. Warriner,

Of the U. S. Army, recently at Brooks Field, Texas, has been transferred to Randolph Field, Texas, in connection with the School of Aviation Medicine.

Dr. Harloe Bailey,

Of the class of '31, University of Virginia, has completed his internship at the Iowa Methodist Hospital, Des Moines, Iowa, and returned to his home at Saltville, Va.

Dr. Louis C. Brand,

Of the class of '23, University of Virginia, Department of Medicine, who has been on a year's furlongh in Virginia, has returned to his work in connection with the American Southern Presbyterian Mission at Kwangju, Korea.

Dr. Edmund Horgan,

Washington, D. C., is attending the Centenary meeting of the British Medical Association, as a delegate from the American Medical Association. He expected to remain in Europe for several weeks following the meeting.

Dr. Calvin H. Cain

Has located at Orange, Va., where he will be engaged in general practice. He graduated from the Medical College of Virginia in 1930 and has been serving an internship at the Graduate Hospital of the University of Pennsylvania.

Dr. Wyatt E. Roye,

A graduate of the Medical College of Virginia in 1931, has located at 307 W. Brookland Park Boulevard, Richmond, for general practice. He served his internship at Grace Hospital.

Dr. E. Marvin Mann

Is practicing medicine with Dr. S. M. Mann, of Moyock, N. C. He is a graduate of the Medical College of Virginia, class of '31, and served internships at Grace Hospital, Richmond, and St. Vincent's Hospital, Norfolk.

Dr. J. G. Storie.

After having spent the past year in the mountains of western North Carolina, recuperating and doing some special study in diseases of children and preventive medicine, has returned to Grundy, Va., to resume his practice.

Dr. Antonio Gentile,

Will be located at Newport News, Va., after September 1st, as a member of the Staff of the Elizabeth Buxton Hospital, where he will practice surgery and gynecology. He has recently been located at University, Va.

Dr. Frederick Pilcher, Jr.,

Having recently completed an appointment at the University Hospital, has sailed for Vienna, where he will spend the remainder of the year studying. He is a member of the class of '29, University of Virginia, Department of Medicine.

Dr. Prosser Harrison Picot,

Of the class of '30, University of Virginia, Department of Medicine, is now located at the Women's Hospital in New York. He was the officiating physician at this hospital when the 20,000th baby was born recently.

Dr. O. K. Burnette

Announces the opening of his offices at the former location of Dr. J. W. Humphries in Culpeper, Va., where he will continue the practice of general medicine.

Dr. L. M. Hines,

Formerly of Drill, Va., has located at Abingdon, where he will be engaged in general practice.

Hourly Nursing Service.

The Private Duty Nurses' Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

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Obituary Record

Dr. Edmund Dozier Hunter,

Norfolk, Va., died June 30th, after an illness of some time. He was sixty years of age and graduated from the College of Physicians and Surgeons of Baltimore in 1901. Dr. Hunter was a native of Princess Anne County, Va., and had practiced in Norfolk for thirty years. He had been a member of the Medical Society of Virginia for twenty-eight years. His wife and a sister survive him.

Dr. Adrian Baldwin,

North Fork, Va., died November 1, 1931. He was seventy-seven years of age and graduated from the Louisville (Ky.) Medical College in 1896. Dr. Baldwin had been a member of the Medical Society of Virginia for twenty-eight years.

Resolutions on Death of Dr. Grandy.

Dr. Charles R. Grandy was born in Norfolk, April 9, 1871, the son of Cyrus Wiley Grandy and Mary Selden Grandy. His early education was obtained at the Norfolk Academy and the Bellevue High School. He entered the University of Virginia in 1889, where he distinguished himself as an exceptional student, graduating in 1892, with the degrees of Bachelor of Arts and Doctor of Medicine. After serving as interne in the City Hospital of New York, and the Hudson Street Hospital of that city, he continued his training in Europe, studying and working in the clinics of Freiburg, Frankfort and Berlin.

In 1898, Dr. Grandy began the practice of Medicine in Norfolk. He was the author of the first comprehensive public health law for Virginia, a measure that was adopted in 1899. Early in his career he became interested in the study of tuberculosis, and was a leader in the fight against this dread disease. In 1906 he organized the anti-tuberculosis clinic of this city, the first in the State, and remained at its head until his death. In recognition of this service, the city's tuberculosis sanitorium was last November dedicated in his honor, "The Charles R. Grandy Sanitorium."

Dr. Grandy served as president of the Norfolk County Medical Society from 1900 to 1901, and was president of the Medical Society of Virginia from 1930 to 1931. He was a member of the American Public Health Association, the American Child Health Association, the National Tuberculosis Association, a Fellow of the American College of Physicians, and a member of the Alpha Omega Alpha Medical fraternity.

Now, Whereas, The Norfolk County Medical Society has learned with profound regret of the death of their beloved and esteemed past-president, Dr. Charles R. Grandy. Therefore, be it

Resolved, First: That in the death of Dr. Grandy the Norfolk County Medical Society has been deprived of one of its most valuable members, whose character was of the highest, whose kindliness knew no bounds, and whose unselfishness and lofty purpose set him as a man apart. In addition, he was a skilled and learned physician and gave his time, his means, and his skill liberally to the poor, unfortunate and ill ones of our community.

Resolved, Second: That a page in the minute books of this Society be set apart and dedicated to his memory;

Resolved, Third: That a copy of these resolutions, with an expression of our sincerest sympathy, be sent to his family, and a copy each to the local press and to the Virginia Medical Monthly.

A. Brownley Hodges,
N. G. Wilson,
Committee.

Resolutions on Death of Dr. Sims.

At a called meeting of the Warwick County Medical Society, held June 22, 1932, the following resolutions were unanimously adopted:

Whereas, it has pleased the all-wise Creator to remove from our midst our comrade, Doctor Thomas Jackson Sims, who passed to his reward on June 9, 1932, after an illness of several weeks,

Resolved, That in the death of Dr. Sims the profession has lost a valuable member and the community an outstanding citizen. Dr. Sims upheld the best traditions of his profession; he took a keen interest in the welfare of his patients and at all times he gave to them his best service. He was a humanitarian, a Christian soldier, a most useful churchman, and was a stepping-stone for humanity to reach nobler heights.

Resolved, That these resolutions be spread on the minutes and a copy be sent to the bereaved family.

B. Roscoe Gary,
W. F. Cooper,
W. S. Snead,
Committee.

Dr. Edwin Murray Mann,

Kenbridge, Va., died July 2nd. He was a native of Petersburg, Va., and sixty-four years of age. Dr. Mann graduated from the University of Virginia, Department of Medicine, in 1887. He was formerly head of an army hospital in San Carlos, Ariz., but had practiced in Lunenburg County, Va., for thirty years. His wife and three children survive him.

Dr. Anna Moon Randolph,

Hampton, Va., died April 8th. She was seventy-two years of age and a graduate of the Woman's Medical College of Pennsylvania in 1899.

Dr. William Jackson Smith,

Sperryville, Va., died May 1st of chronic myocarditis and nephritis. He was seventy years of age and graduated from the Jefferson Medical College, Philadelphia, in 1886.

Dr. Caesar S. Bassett,

Hampton, Va., died May 24th, of pulmonary embolism following an appendectomy. He was fifty-four years of age and graduated from the Leonard Medical School, Raleigh, N. C., in 1906.

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RICHMOAD, VA., SEPTEMBER, 1932

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RICHMOAD, VA., SEPTEMBER, 1932

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DIABETES MELLITUS IN CHILDREN AND YOUNG ADULTS.*

H. B. MULHOLLAND, M. D., University, Va.

I have chosen to discuss diabetes in children and young adults. My reasons for doing so are threefold: First, a selfish one, the interest and fascination one derives from dealing with patients in this age period; second, because of the increasing responsibility of the profession towards this group, who are daily becoming more numerous through the use of insulin, which keeps them alive; third, one deals here with the purest type of the disease uncomplicated by the changes of age, and it is hoped something may be added by a study of this kind.

The disease during this period is more severe than in the later years, and often progressive. Certainly the latter was true before the use of insulin. Heredity plays an important part, 35 per cent according to Joslin and White,[1] and 44 per cent in those who have lived longer than ten years, the parent often developing the disease after the child.

Diabetic children are prone to be overdeveloped at the onset of their disease, especially in height and mental acuity. The former may, according to White,[2] cause a functional strain of the pancreas.

Studies on the pathology have emphasized the paucity of findings, the most common one being a lymphoid infiltration of the pacreas.[3] Recent observations on the condition of the vessels in these cases have shown that arteriosclerosis is very prevalent, being found in 36 per cent of fifty cases examined by Shepardson[4] using X-ray of the extremities. All of these were under forty years of age. Warren and Page[5] also report it as a frequent finding at autopsy. This has led to an intensive study of the lipoid metabolism, which so far has not explained the development of this condition at such an early age.

One is struck by the varying types of diet used in treatment. However, a distinct tendency towards a normal diet is evident, and an amount of protein adequate for the patient's need at his particular age is an established principle.

Since 1923, forty cases of diabetes have been observed at the University of Virginia Hospital, who fall under the age of twenty-one years. Fifteen of these cases were males and twenty-five females, the youngest being two years of age and the eldest twenty years old, at the time of their admission.

Three only were colored. Twenty-two are now known to be living, thirteen (31 per cent) dead, and five have not been recently heard from.

Table I gives the cause of death in those known to be dead.

Table II gives for the living cases the length of time in years since first admission.

Table III gives the important facts regarding each of the forty cases.

TABLE I

CAUSE OF DEATH

Acidosis or Coma	8
Tuberculosis	2
Carbuncle	1
Shock (?)	1
Unknown	1
	13

TABLE II

KNOWN LIVING CASES

NUMBER OF YEARS SINCE FIRST ADMISSION

Less than one year	3
One to two years	5
Two to three years	2
Three to four years	3
Four to five years	2
Five to six years	1
Six to seven years	1
Seven to eight years	4
Eight to nine years	1
	22

*From the Department of Internal Medicine, University of Virginia.

Read at the annual meeting of the Medical Society of Virginia, in Roanoke, October 6-8, 1931.

TABLE III

Case No.	Name	Sex	Age	Date Admitted	Condition	Weight lbs.	Weight normal	Discharge Diet			Insulin		Remarks
								C.	P.	F.	Then	Now	
1	F.M.	F.	19	3-30-23	Coma								First case treated with insulin here. Died.
2	M.D.	M	16	4-3-23	Acidosis	110		70	60	190	0		Last heard from 1927. Then taking 30 units insulin. Mild T. B.
3	M.T.	F	14	4-7-23	Acidosis	72		50	50	100	0		Would not stay on diet. Died in past year. Father diabetic.
4	M.V.	M	10	11-9-23	Severe	63½	71	55	35	160	0		Left against advice with severe acidosis. Died at home in coma.
5	J.K.	F	14	11-12-23	Coma	69½	83	60	55	150	0	?	Eats more carbohydrate. Working. Has not lost a day in two years.
6	J.D.	M	5	12-20-23	Coma	36¼	42	50	22	80	6	6	Taking more diet. Weight 55¼ lbs.
7	F.D.	F	14	1-13-24	Mild	66		46	38	138	0		Now working in hospital as nurse. Restricts diet only moderately.
8	E.F.	F	17	1-15-24	Mild	109	117						Left against advice. Seen in 1929. No sugar. Diet normal.
9	R.S.	F	10	2-4-24	Coma	46	64	55	30	125	0	58	Patient has had many admissions. Areas of superficial gangrene on chest, hands and feet. Weight 113 lbs. Severe case.
10	R.P.	F	12	3-29-24	Coma	60	78	55	46	135	44	65	Weight now 131 lbs. Many admissions with severe infection. Now doing well.
11	E.B.	F	8	10-3-24	Coma	43	51	55	35	80	24		Died May 30, 1925, at home. Probably in coma.
12	B.C.	F	13	12-20-24	Coma	71	89	60	45	180	0		Died in coma at home within the past two years.
13	J.F.	F	8	10-8-25	Mild	50		68	36	127	9		Died in coma at home 2½ years after admission.
14	S.M.	F	9	10-20-25	Coma								Died in coma three hours after admission. Symptoms of acidosis one week before.
15	L.H.	M	8	10-24-25	Acidosis	40	60	64	39	134	0	24	Now weighs 76½ lbs. Hard to keep sugar free, but doing fairly well.
16	C.C.	F	19	11-24-25	Mild	109½	126	100	58	180	0		Died in October, 1926. Advanced tuberculosis. Would not stay on diet. Sister had diabetes.
17	F.C.	F	16	12-29-25	Mild	101		57	41	206	0		Later insulin required. Had syphilis and died of tuberculosis in 1929. Sister had diabetes.
18	J.T.	M	2	8-16-26	Coma								Received 45 units of insulin and died in convulsion in first 24 hours. ? shock.
19	M.B.	F	7	9-7-26	Mild	51¾		75	45	100	0		Died in coma February, 1927, at home.
20(a)	M.M.	F	17	10-28-26	Coma	80	110	65	65	200	0	29	Has recently had typhoid fever Required 365 units insulin in 12 hours for coma, on a much higher diet. Case doing well.

C Carbohydrate P Protein F Fat

(a) Died in Washington in May, 1932, Infection and Coma.

TABLE III (Continued)

Case No.	Name	Sex	Age	Date Admitted	Condition	Weight lbs.	Weight normal	Discharge Diet			Insulin		Remarks
								C.	P.	F.	Then	Now	
21	C.C.	M	11	3-18-27	Acidosis	75	80	60	50	100	30		Died at home in 1929 with carbuncle.
22	N.S.	M	17	10-16-27	Mild	152¼	117	80	80	150	36		Not traced. Diagnosis was made by tolerance test which precipitated sugar.
23	L.H.	F	14	11-21-27	Severe	95	94	60	50	150	18	22	Weight 100. Has grown 4 in. Seems to be doing fairly well.
24	C.G.	M	18	1-21-28	Moderate	98	122	55	50	175	0	52	Weight 121. Height same. Mental condition poor. Melancholia. Sister has diabetes.
25	J. N.	M	5	1-25-28	Mild	44	46	75	55	175	0	19	Put on diet C190, P75, F90. Has been able to reduce insulin to 19 units a day. Hard to keep on diet, hence high carbohydrate. One year ago had appendix abscess.
26	A. P.	F	14	2-13-28	Mild	100½	112	70	90	120	0	33	Sister has diabetes. Weight now 125½ lbs. Doing very well.
27(b)	L. E.	F	15	10-24-28	Mild	100½	106	65	60	120	5	60	Weight 127½. Patient did well for 2½ years. Suddenly lost tolerance, no cause found.
28	C. M.	M	16	3-11-29	Acidosis	121	133	75	60	165	25		Not traced.
29	E. R.	M	6	3-30-29	Mild	37	42	90	40	110	0		Dead. Coma at home. Deaf and dumb, impossible to keep on diet.
30	D. D.	F	13	5-9-29	Mild	104	94	Rest	ricte	d C.	H.		Sugar free. Weight 104. Very mild case.
31	C. S.	M	14	10-7-29	Severe	91	114	80	80	160	74	30	Weight 128 lbs. Working. Stays on diet. Doing very well.
32	F. L.	F	18	3-7-30	Mild	105¼	130	100	80	140	4	34	Weight 114 lbs. Decrease in tolerance apparently due to slight antrum infection. Case doing well. Tolerance improving.
33	S. B.	M	20	5-27-30	Mild	128	139	85	95	160	20		Not traced.
34(c)	O. W.	F	2	6-23-30	Severe	24	26	70	45	80	2	20	Weight 28 lbs. Hard to keep on diet. Colored child.
35	P. B.	M	12	9-6-30	Severe	79¼	85	100	100	120	21	30	Weight now 107. Doing very well.
36	R. B.	M	10	10-2-30	Moderate	57½	60	110	100	125	8	30	Weight 76 lbs. Has recently had insulin adjusted. Doing well.
37	H. B.	F	8	10-11-30	Moderate	35¾	51	60	40	100	10	8	Weight now 57 lbs. Doing well.
38	C. W.	F	13	1-30-31	Severe	69	86	100	100	130	34	48	Weight now 92½ lbs. Severe case. Mother has diabetes.
39	M. C.	F	8	3-15-31	Moderate	48¾	53	100	100	90	11	7	Weight now 55 lbs. Father has diabetes. This case doing well.
40	B. B.	F	15	4-22-31	Coma	94	118	85	100	130	45	42	Weight now 101 lbs. This patient has a low mentality and does not follow diet or insulin. Prognosis poor.

(b) Tolerance now improving again.
(c) Has since died at home. (Probably coma.)

Discussion

Five only of the living cases show a definite gain in tolerance, Nos. 5, 6, 7, 31 and 39, but the encouraging fact is that this gain has been shown by three of the cases who have been under treatment for over five years.

It will be noted that many of these cases could be handled without insulin on their first admission; later, almost invariably, insulin was required, which emphasizes the severity of the disease at this period. The adjustment of insulin in many cases has occasioned extreme difficulty. Very few have been able to take their injections in equally divided doses. The correct spacing has been arrived at in various ways, examining specimens of urine voided one hour after each meal, which will suffice in many; examining each voided specimen, which is necessary in some instances, and getting a twenty-four hour blood sugar curve, which has been rarely necessary. I have found that in the severe cases there is a tendency for the blood sugar to rise during the night, resulting in sugar appearing in the urine either before or after breakfast, associated with a high fasting blood sugar. A few of these may be corrected by dividing the before supper dose in half, and giving the last half at bedtime. Others require an additional dose at bedtime, and several require a dose at four o'clock in the morning.

Following the work of Porges,[8] in Austria, Sansum[7] and Rabinowitch,[6] on this continent, it will be noted that the carbohydrates in our diets have been materially increased in the later years. However, in only one case in this group, No. 25, have we gone as far as they have. So far this child has done very well, and it is intended to carry out further clinical investigation with very high carbohydrate diets in selected cases.

Case No. 32 demonstrates the loss of tolerance occasioned by an unsuspected focus of infection.

Familial diabetes is frequent in this series, as has been noted by others.

The percentage of deaths occurring from coma is high. Perhaps some of these could have been saved. If one sees the case early enough, and pushes the insulin there is little excuse for losing an uncomplicated case. The family should be taught to recognize the early symptoms and call for help. Case No. 20 recently required 365 units of insulin in twelve hours to bring her out of coma.

It is believed our results demonstrate that it is possible to carry a juvenile diabetic to the threshold of adult life, even though the path is beset by serious illness. Those who survive on the whole are normal individuals as regards weight and height, and often have more than the average mental capacity.

Summary

An analysis of forty cases of diabetes in patients under twenty-one years of age is presented, and certain points arising out of this analysis are emphasized.

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SUBPHRENIC INFECTION—A CLINICAL CONSIDERATION OF ITS DIAGNOSIS AND TREATMENT.*

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Since Barlow's original article appeared in 1845 upon the present subject, physicians have struggled to master the problems of diagnosis and treatment of a disease whose symptoms and signs are common to a pathologic process involving the tissues either of the lower thorax or upper abdomen. Frequently this picture is further complicated by a post-operative, suppurative, surgical wound of the abdomen. Because of the elusiveness of the symptoms and signs, and because of this post-operative state, the diagnosis has been most baffling; and because this territory is harbored in part at least by a bony thoracic cage, its surgical approach has been most arduous. The mortality of this malady has been variously estimated by different authors to range from 30 to 100 per cent. A review of the subject reveals that this high mortality has been due very largely to late diagnosis, to contamination of serous cavities while attempting surgical approach, and

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to inadequate surgical drainage. Because this appalling mortality still prevails, and because it is attributed to late recognition and faulty surgical drainage, the writer feels it would not be amiss to discuss once more the diagnosis and treatment of this disease, despite numerous splendid articles which have appeared in the literature by most eminent authorities.

There is some confusion in the literature concerning the boundaries and divisions of the subphrenic spaces, but the description of Bernard appears to rank with those most popularly accepted.

- Intraperitoneal
  - right
    - anterior
    - posterior
  - left
    - anterior
    - posterior
- Extraperitoneal
  - right
  - left

The intraperitoneal space is divided into a right and a left by the falciform ligament of the liver, and each of these into an anterior and posterior by the lateral ligaments.

The right extraperitoneal space is that area uncovered by peritoneum between the folds of the coronary ligaments as they are reflected onto the diaphragm.

The left extraperitoneal space lies above the upper pole of the left kidney where the peritoneum is reflected onto the diaphragm.

I shall not dwell upon the anatomy but shall dismiss the subject by saying that a knowledge of it is of particular importance to both roentgenologist and surgeon.

Etiology

The etiology of subphrenic abscess is variable. Perforation of a hollow viscus, or intra-abdominal suppurative processes from whatever cause are accused of being the etiologic factor in about two-thirds of all cases.

In a second but smaller group of cases, the infection is carried through the lymphatics or by direct extension of inflammations from the retro-peritoneal tissues such as may be caused by a perinephric abscess or a retrocecal appendix. An occasional abscess is found to be due to a focus remote from the subphrenic space.

In a third group of cases, the primary lesion is found in the thorax. Nine of Bernard's seventy-six cases, and eighteen of four hundred and forty-eight cases collected by Archibald were of this type. It is sometimes a difficult matter to tell whether the primary lesion is above or below the diaphragm. When the two co-exist, the evidence must be strong to prove the thoracic origin when one realizes that the lymphatic drainage is upward through the diaphragm.

The colon bacillus is the organism most commonly found in subphrenic abscesess. These are often associated with streptococci, staphylococci and numerous anaerobic organisms.

Not all cases of subphrenic infection undergo suppuration and abscess formation. Attention has been called to this by Neuhof who studied nine hundred and seventy-two cases of appendicitis and found fifteen cases of subphrenic infection which did not progress to suppuration. Other cases have been recorded by Ochsner, Lee and Clendening.

The origin of infection in eighty-four cases studied by Fifield and Love is as follows:

Table 1

	Number of Cases	*Per Cent of all Cases*
Appendicitis	30	35.7
Perforated duodenal ulcer	12	14.2
Perforated gastric ulcer	12	14.2
Operations on stomach	9	10.7
Gall-bladder	5	5.9
Kidney	2	2.3
Chronic gastric ulcer	1	1.1
Carcinoma of stomach	1	1.1
Carcinoma of esophagus	1	1.1
Fractured pelvis	1	1.1
Rib	1	1.1
Unknown	9	10.7

The origin of infection in four hundred and ninety-six cases collected from the literature by Perry will be seen in table two:

Table 2

	Per Cent of All Cases of Subphrenic Abscess
Appendix	25.3
Stomach	23.1
Duodenum	3.2
Liver and bile passages	8.8
Hydatid cysts	5.0
Intestine	2.4
Pancreas	1.0
Spleen	0.2
Kidney	4.6
Ribs	1.3
Intra-thoracic lesions	4.9
Female genital organs	1.3
Traumatic lesions	3.4
Metastatic	4.4
Unknown and various causes	5.5

In one thousand cases reviewed by Whipple, the origin of the infection was as follows:

TABLE 3

	Per Cent of All Cases of Subphrenic Abscess
Stomach	25%
Appendix	21%
Biliary tract	16%
Duodenum	5%

In 1909 Lance studied the origin of the infection in one thousand cases and tabulated the following results:

TABLE 4

		Per Cent of All Cases of Subphrenic Abscess
Appendicitis		20%
Stomach and duodenum		30%
Liver and gall-bladder		13%
Miscellaneous	Pancreas, Spleen, Colon, Pleura	37%

In 102 cases reported from the Mayo Clinic, the primary lesion occurred in the stomach and duodenum twenty-two times, the liver and gall-bladder thirty-three times, the appendix twenty-two times, and in a focus of infection elsewhere sixteen times.

Lockwood found in a group of 3,000 cases collected from the literature that abscesses developed in from .6 per cent to 1 per cent in all cases of appendicitis, but the incidence varies considerably according to different authors from .34 per cent to 6.1 per cent of all cases of appendicitis, and 6.6 per cent to 92.8 per cent of all residual intra-abdominal abscesses.

In 2,400 cases of appendicitis operated upon by the late John B. Deaver, subphrenic abscess occurred twenty times.

Despite slight discrepancies, it becomes evident from the above statistics that the most frequent causes of infection and suppurative processes of the subphrenic spaces begin in the appendix, stomach, duodenum, and biliary passages.

The question naturally arises as to why the infection localizes beneath the diaphragm, and attempts have been made to explain this on an anatomical basis and the subsequent aid of gravity. The posterior abdominal wall is divided by the vertebrae into two deep gutters; the lumbar elevation also serves as a watershed for accumulations of fluid within the peritoneal cavity. It is generally conceded that these abscesses are far more common on the right side, and peristaltic action of the colon has been offered as a possible explanation for this. The formation of subphrenic abscess is more common in males than females, and this has likewise been explained on the basis of anatomical variations between the female and male pelvis permitting the paracolic groove to drain more readily in the pelvis of the female. Of 113 cases reported from the Mayo Clinic by Lockwood in 1921, eighty-four were males and only twenty-nine females.

SYMPTOMS AND SIGNS

The symptoms and signs of subphrenic infection vary with the etiology, location, and stage of development of the inflammatory process. If the abscess originates from a perforated gastric or duodenal ulcer, the symptoms may be abrupt in their onset, while those originating from mere soiling of the peritoneal cavity may be insidious in their development. If the abscess is located in one of the anterior spaces, the signs are usually referable to the upper abdomen; conversely, if the abscess forms in one of the posterior spaces, the signs are often referable to the chest or lumbar region of the affected side. If the patient is seen early in the course of the disease, the abdominal signs are more pronounced, but if the patient is seen late in the course of the disease the chest manifestations may be more pronounced and indeed may completely overshadow the abdominal signs. There is no single symptom or sign pathognomonic of the disease, but there are certain manifestations which lead one to suspect subphrenic infection. Whenever an unexplained fever persists after an abdominal operation, particularly when there has been contamination or suppuration within the peritoneal cavity, one should at once think of the possibility of the development of a subphrenic abscess, just as one under similar circumstances thinks of the development of empyema after pneumonia. In like manner, if there is definite improvement for a certain interval of time after such an operation, with a return of constitutional symptoms of infection accompanied by signs referable to the region of the diaphragm, subphrenic abscess should be considered. To think of the condition is a great aid in making the diagnosis, because the initial manifestations of the disease are frequently erroneously interpreted for chest complications such as pneumonia, pleurisy, or empyema. In the great majority

of cases subphrenic abscess develops in the course of some other infection and there is merely an increase in the general constitutional symptoms and signs.

Pain is often the presenting symptom; it is usually located at the costal margin between the eighth and eleventh ribs, and between the axillary lines. It is often referred to the shoulder, scapula or lumbar regions. Frequently it is dull or aching in character, but occasionally it may be sharp and lancinating; it is often aggravated by deep inspiration. In the average case the temperature ranges from 99° to 102° or more, and is of the septic, remittent type, with a corresponding increase in the pulse rate. The respiratory rate is rarely commensurate with the temperature-pulse curve. The temperature-pulse curve, particularly when associated with hiccough, sweating, and a sharp catchy cough, is often diagnostic of an inflammatory process around the liver or diaphragm. Dyspnea is occasionally observed; vomiting rather rarely unless there is some interference with the motility of the stomach. There is usually a leukocytosis, and the average range is around seventeen thousand with a corresponding increase in the polymorphonuclear elements. When the patient is further studied from a physical standpoint, other constitutional signs of sepsis manifest themselves. There is usually emaciation with progressive loss of weight. Percussion may be dull at the base of the lung on the affected side, and this dulness may extend as high as the fourth rib anteriorly; the normal excursion of the diaphragm is usually not obtained. Fremitus will be decreased and breath sounds diminished or tubular in type particularly if there is a large accumulation of pus with a subsequent compression of the lung base. Pleural friction sounds and rales are commonly heard, and if the abscess cavity contains gas, there may be dulness above, hyperresonance over, and dulness below this cavity. There may even be a succussion splash upon moving the patient, and metallic tinkles are often demonstrable. The abdominal thoracic movement is limited on the affected side, and there is usually tenderness in the intercostal spaces, the hypochondrium, or epigastrium. The tenderness in the upper abdomen is perhaps a little more outstanding when the abscess is placed anteriorly and on the left side. The stomach may be pushed downward if the abscess is on the left side, and the liver may be pushed downward if the abscess is on the right. This, however, is not always true because the liver is often fixed by adhesions in its normal position and occasionally from nature's attempt to prevent the infection from invading the general peritoneal cavity, the omentum may push the liver upward and adhesions may fix it in its altered position.

An adequate roentgen study and the proper interpretation of the evidence thereof is perhaps the greatest single aid in arriving at a diagnosis. This study should not consist merely of a flat plate taken in recumbency; both roentgenoscopic and roentgenographic examinations must be made if one hopes to obtain all the evidence available. Roentgenographic examinations must consist of both antero-posterior and lateral views. Roentgenoscopic examination is greatly facilitated by means of a tilt fluoroscopic table. The fluoroscopic examination gives information regarding the position in which roentgenograms are to be made. The mobility or immobility of the diaphragm may be observed, and when the abscess contains gas, a fluid wave may be seen upon shaking the patient. Roentgenograms made in the antero-posterior position show merely that the abscess is on the right or left side, while roentgenograms made in the lateral position will often show in which subphrenic space it is located. This information is of great value to the surgeon in determining the

Fig. 1.—Diaphragm fixed, elevated, abnormally arched and accompanied by a secondary pneumonitis. This followed a perforated duodenal ulcer. At operation, the acute subphrenic infection had subsided and there were dense adhesions between the liver and diaphragm. These are the same roentgen findings as those seen when acute abscess is present. (Surgical Service of Howe and Jones, Dixie Hospital.)

most direct method of operative approach. Furthermore, by X-ray and fluoroscopic examinations the lung may be found to be pushed upward, the diaphragm elevated, abnormally arched, irregular and fixed in its position, though a moderate excursion does not rule out the possibility of a subphrenic abscess.

Fig. 2.—Right lung pushed upward. Right diaphragm elevated and irregular in contour. Right subphrenic abscess following appendicitis, acute, with perforation. (Surgical Service of Trout and Jones; Jefferson Hospital.)

The costo-phrenic angle is often obliterated, and this obliteration or density is due to a secondary pleuritis or pneumonitis with some accumulation of fluid. In complicated cases of long standing, fluid may be found, also, above the diaphragm, and in these cases the roentgen

Fig. 3.—Fluoroscopy revealed a fixed right diaphragm. X-ray shows right diaphragm elevated, ragged in contour, and abnormally arched. Costo-phrenic angle more acute than normal. Secondary pleuritis and pneumonitis. Gas bubble beneath right diaphragm. This followed generalized peritonitis of unknown etiology. (Surgical Service of Trout and Jones; Jefferson Hospital.)

diagnosis is extremely difficult or even impossible unless gas is contained in the abscess below the diaphragm.

The vertical liver density is increased in the X-ray. According to McNamee, when the abscess occurs on the left side and contains gas and a fluid level, roentgenoscopic examination may reveal the fluid being agitated by each heart beat, forming a wave.

Failure to make some reference to the use of the exploratory needle would perhaps be out of order in a discussion of subphrenic abscess. Almost all authorities discuss its use with disapproval. Some even go so far as to say there is no more justification for needling a subphrenic abscess then there is for needling an appendiceal abscess. There are a few who still advocate the use of the curved needle devised by Clairmont. Almost all writers agree that needling should not be attempted until the patient is anesthetized and ready for operation. Its use is discouraged because of the danger of complications which may result from contamination of a virgin pleural or peritoneal cavity. Furthermore, the evidence derived therefrom, particularly when negative, is quite misleading, inasmuch as the pus when present so frequently escapes aspiration. Consequently, negative findings naturally lead the physician towards costly delay.

Diagnosis

In the diagnosis of subphrenic abscess, great weight must be placed upon the history of previous intraperitoneal infections. Associated with this history are added constitutional signs of sepsis, asthenia, anorexia, fever, leukocytosis, progressive loss of weight, and lower thoracic or upper abdominal pain which may be referred to the shoulder, scapula, or lumbar regions. In the early course of the disease there should be few signs referable to the chest. Late in the course of the disease, pulmonary or pleuritic manifestations are almost invariably present.

Aside from the history of previous intra-abdominal infection, an early, carefully planned, roentgen study with the proper interpretation of the evidence thereof offers the greatest single aid to diagnosis. The writings of Pancoast, Granger, Hodges, LeWald, O'Brien and McNamee have done much to clarify the problems confronting the roentgenologist. Early in the disease the signs consist merely of slight elevation of the

diaphragm and limitation of its excursion; hence, the importance of fluoroscopic studies. Later in the course of the disease, these signs become more pronounced and others are added; the diaphragm becomes abnormally arched and irregular in outline.

Fig. 4.—Fluoroscopy revealed limitation of excursion of right diaphragm. The X-ray shows both diaphragms high. This illustrates the difficulty of diagnosis in the presence of abdominal distention. The right diaphragm is irregular in contour. Operation revealed a right subphrenic abscess following pelvic peritonitis from specific salpingitis. (Surgical Service of Buxton and Sayre; Elizabeth Buxton Hospital.)

Cases of still longer standing show density or obliteration of the costo-phrenic angle and a secondary pleuritis or pneumonitis with the accumulation of a small amount of fluid.

Fig. 5.—Fluoroscopy revealed elevation and limitation of excursion of both diaphragms. X-ray shows irregularity and abnormal arching of both diaphragms. The costo-phrenic angles are obscured and there is a secondary pleuritis and pneumonitis particularly in the right lung. Operation revealed bilateral subphrenic abscesses following peritonitis resulting from acute specific salpingitis. (Surgical Service of Howe and Jones; Dixie Hospital.)

Fig. 6.—Picture of same patient as seen in Figure 5, except taken at a later date, and shows a large gas bubble beneath the right diaphragm. In neglected cases, there may even be a frank empyema.

Fig. 7. Left subphrenic abscess of long standing complicated by empyema. Diaphragm hidden by the presence of fluid above and below it. This occurred in a colored patient and resulted from a broad ligament abscess complicating childbirth. (Surgical Service of Buxton and Sayre; Elizabeth Buxton Hospital.)

Too much importance should not be attached to negative X-ray reports, particularly when an antero-posterior view alone is taken with the patient in recumbency. Such evidence is misleading to the surgeon, conducive to procrastination, contributory to a profound toxemia, and responsible in part for the present appalling mortality. When there is difficulty in making the diagnosis of a suspected subphrenic abscess, roentgen examination should be repeated frequently. If the clinical signs are characteristic and the diagnosis cannot be

satisfactorily established, it is far better to explore than to delay; for what does it profit the surgeon to postpone operation for mere accuracy in diagnosis while a profound toxemia develops and leaves him without a living patient to his credit?

Brown, of Cincinnati, has shown by roentgen study that the posterior attachment of the diaphragm is on a lower level than the anterior; and, furthermore, that the posterior half of the right diaphragm is on a lower level than the posterior half of the left. The most common location for subphrenic abscesses is the "right posterior superior space," and these may escape recognition entirely when viewed in the antero-posterior direction alone.

Aspiration, also, is equally as misleading, and this has been emphasized by Hirsch who reported a case in which twenty-three consecutive aspirations were attended with failure, but the twenty-fourth revealed the presence of pus beneath the diaphragm.

Subphrenic abscesses must be distinguished from pleurisy with effusion, hepatic, and perinephric abscesses.

In pleurisy with effusion, a history of previous pulmonary disease may be obtained. The temperature is usually not of the remittent type. Dyspnea and cyanosis are more marked, and the breath sounds cease more abruptly upon approaching the pathologic process. The level of the fluid varies with the position of the patient, and the heart is more frequently displaced; the diaphragm is low rather than high, and the area of dulness concave at the upper margin rather than convex. The X-ray may be of considerable diagnostic aid, and thoracentesis may readily reveal fluid above the diaphragm.

It is often difficult or even impossible to distinguish hepatic from subphrenic abscesses. A history of amebic dysentery may be elicited; the liver is enlarged rather than displaced, and there is more often jaundice. The kidney is more likely to be distorted, and the heart is more frequently displaced to the opposite side.

In perinephric abscesses, the etiology is usually different. The pain is often lower, and the tenderness more marked posteriorly. It may be distinguished by the urinary findings if the infection has reached the collecting tubules, or by the roentgen evidence if the margin of the lumbar muscle is obscured on the affected side, and the spine deviated away from the involved area or convex toward the well side.

Treatment

The treatment of infection in the subphrenic space may be divided into three stages:

1. Prophylactic.
2. Palliative.
3. Operative.

Prophylactic: The incidence of subphrenic abscess would perhaps be greatly diminished if more cases of intra-abdominal suppuration were treated conservatively. Fifeld and Love found in two hundred and twenty-eight cases of ruptured appendicitis treated conservatively that subphrenic abscess occurred in but one case; whereas, in eleven hundred and nine cases subjected to immediate operation, subphrenic abscesses occurred seven times. The early removal of drains is becoming more and more popular without the proper discrimination of those cases which most often result into the formation of subphrenic abscesses. If more careful attention were paid to the constant maintenance of Fowler's position postoperatively, there would be fewer subphrenic abscesses provided the infection had not reached the diaphragm prior to operation. The great trouble is that the patients are allowed to slip down in bed until the angle is not sufficiently elevated for practical purposes of drainage. Coffey has demonstrated that either flank holds more than the pelvis when the patient is lying on the back, and, furthermore, in order to drain the fluid from the flank into the pelvis, the body must be elevated to an angle of sixty or seventy degrees. Coughlin performed experiments on cadavers and found that when the body was placed in horizontal position fluid poured into the abdomen was deepest in the region of the eleventh and twelfth ribs. After the body was raised to an angle of forty degrees, fluid was still present in both loins.

Palliative: Not all cases of subphrenic infection progress to suppuration, and frequently the inflammatory process may be allayed and abscess formation prevented if proper treatment is instituted. In this group of cases Ochsner advocates immobilization of the affected side by means of adhesive plaster, the application of dry heat over the involved area, and symptomatic treatment of the toxemia.

Operative: Surgical treatment is indicated in those cases in which suppuration has oc-

curred. This is determined by added signs of sepsis, an increase in temperature of the remittent type, and a more marked tenderness over the affected side. The two chief avenues of surgical approach are the trans-abdominal and the trans-thoracic. The trans-thoracic may be trans-pleural or not. There are many styles and modifications of these general avenues of approach. No single method of approach is applicable to all the subphrenic spaces. It is generally agreed that the trans-abdominal approach either by a marginal or rectus incision is the procedure of choice if the abscess points or is located anteriorly; but a posterior or lateral incision is more desirable if the abscess is located in one of the posterior spaces. The mortality has been high after operative treatment for several reasons: 1. The diagnosis is usually made late in the disease after a profound toxemia is present. 2. Surgical approach to a subphrenic abscess offers technical difficulties which often result in contamination of an uninvolved portion of the peritoneal cavity or a virgin pleural cavity. 3. Proper drainage is often not instituted, and, even when adequately introduced, it is often removed too early. Too much dependence should not be placed upon cigarette drains. Elkin, of Atlanta, advocates the use of rubber tubes through which catheters are placed for irrigation. Walling off gauze is left in place for forty-eight hours, after which time hourly irrigations with saline solution or surgical solution of chlorinated soda are begun. The drains are removed at the end of a week and smaller, shorter ones substituted. He feels that the gradual shortening of drains rather than the early removal will obviate the danger of recurrence of the abscess and will insure healing and obliteration of the cavity at its deepest point.

Lockwood, writing from the Mayo Clinic in 1921, advocated an incision in the ninth, tenth or eleventh intercostal spaces. The skin is undermined, the intercostal muscles divided, and the parietal pleura with the diaphragm firmly adherent to it is separated from the rib above and from the rib below the incision. The interspace is now retracted and the cut edge of the muscle with the pleura is sutured to the diaphragm. The skin, also, is sutured to the diaphragm over the first layer of sutures so as to shut off completely the intermuscular and fascia plains. The diaphragm may then be incised immediately or at the end of twenty-four or thirty-six hours. (Figures 8, 9 and 10, courtesy of *Surgery, Gynecology and Obstetrics;* Lockwood.)

Fig. 8.—Incision in tenth interspace. Suturing muscles to the diaphragm.

Fig. 9.—Suturing skin over cut muscle edge to the diaphragm.

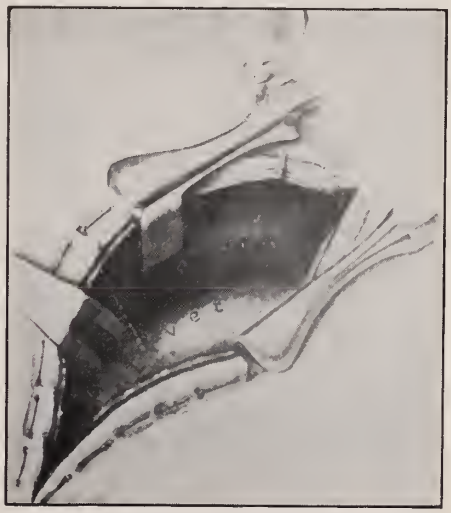

Fig. 10.—Retraction of diaphragm showing space between it and the liver.

Ochsner, of New Orleans, advocated in 1923 a retroperitoneal approach which consisted of a subperiosteal resection of the entire twelfth rib, a transverse incision of the musculature below the rib bed at the level of the first lumbar spinous process, followed by a retroperitoneal approach to the upper abdomen and lower thorax. By this approach, he was able to explore the pleural cavity, the subphrenic, subhepatic, the retrocecal and the retroperitoneal regions through a single incision, extension being made to accommodate the needs of the particular case. In nineteen cases of subphrenic abscess in which this procedure was used by Ochsner, there was but one death, a mortality of 5.2 per cent. In three of the nineteen cases, abscesses occurred concomitantly in the right posterior and the right anterior spaces. I know of no other author who has obtained such brilliant results. (Figures 11, 12, 13, 14 and 15, courtesy of *Surgery, Gynecology and Obstetrics;* Nather and Ochsner.)

Fig. 11.—Exposure of twelfth rib.

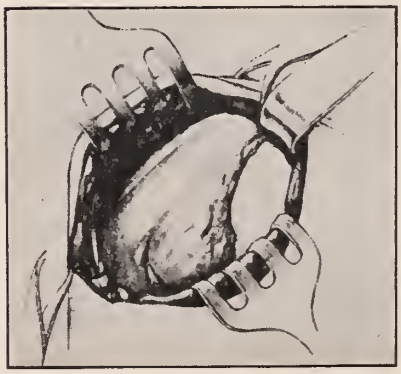

Fig. 12.—Bed of resected twelfth rib in upper part of wound. Incision through muscle running in a perpendicular direction. Lower muscle flap retracted and renal fascia in right lower corner.

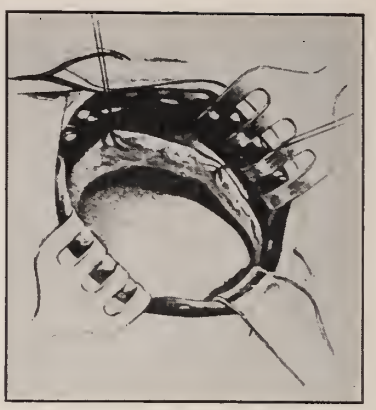

Fig. 13.—Lower edge of diaphragm elevated by two sutures. The peritoneum has been separated from the under surface of the diaphragm. The curved perpendicular line on the plate is the right liver border, to the right of which lies the renal fascia through which the renal fat can be seen. Beneath the visible liver border is the point of election for the exploration of the subhepatic space. On the left between the diaphragm and its separated peritoneum is the point of election for the exploration of the suprahepatic space.

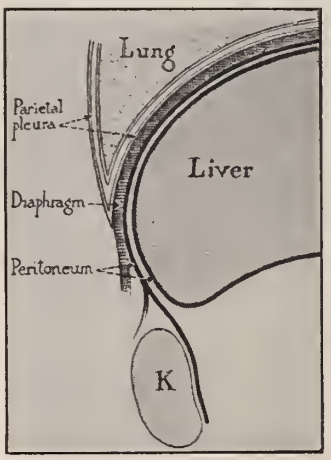

Fig. 14.—Schematic anterio-posterior section showing the normal relations of the right subphrenic region. The shaded portion above is liver and that below is the right kidney. The heavy black line represents the peritoneum.

In August, 1926, McEachern, of Manitoba, advocated closed drainage and irrigation by means of catheters introduced into the abscess cavity through a trocar, and especially recommended this procedure in the extremely ill, to be supplemented by a more radical drainage at a later date provided the patient's condition warranted it.

Writing in the *Annals of Surgery*, August, 1929, Russell, of New York, advocated the trans-abdominal approach, particularly recommending the anterior incision for diagnosis in selected cases, and sometimes drained abscesses of the posterior spaces by the abdominal route.

Clairmont has described an extra-peritoneal

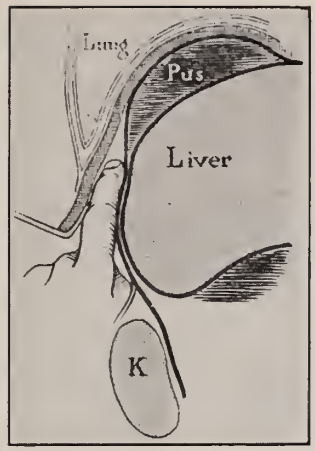

Fig. 15.—Schematic drawing showing the separation of the peritoneum from the under surface of the diaphragm as far as the abscess.

anterior approach for subphrenic abscesses pointing anteriorly, or those formed in the right or left anterior spaces. A marginal incision is made and deepened to the peritoneum. The peritoneum is then carefully separated from the anterior abdominal wall and from the under surface of the diaphragm until the inflammatory process is encountered. The abscess is then opened bluntly in a manner similar to those drained posteriorly. The peritoneal cavity is usually not contaminated because in most cases of subphrenic infection pointing anteriorly, adhesions have already formed between the abscess cavity and the parietal peritoneum, a concomitant facilitating drainage.

In the September issue of the *Annals of Surgery*, 1930, Elkin, of Atlanta, described a two-staged, trans-pleural operation in which portions of the eighth and ninth ribs were subperiosteally resected. In the first stage, the costophrenic angle was obliterated, and in the second stage the diaphragm was incised. (Figures 16 and 17, courtesy of *Annals of Surgery;* Elkin.)

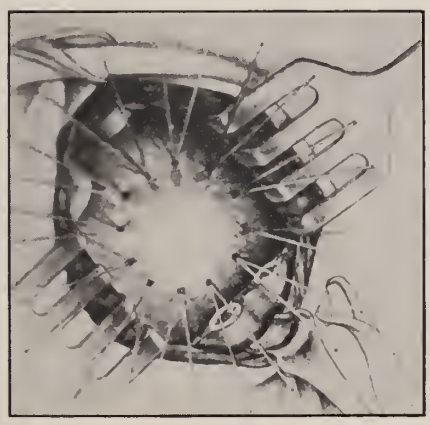

Fig. 16.—First stage. Sutures have been passed through the diaphragm and pleura to obliterate a portion of the costophrenic angle. Sutures are left long to serve as guides at the second operation.

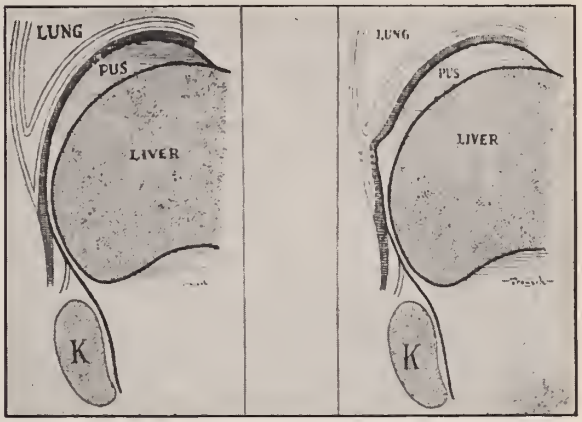

Fig. 17.—a. Position of pus in a high subphrenic abscess. b. Costophrenic angle obliterated by sutures.

Conclusions

1. Subphrenic infection may be a complication of any suppurative process within the abdomen. Not all cases progress to abscess formation. The intra-abdominal lesions which most frequently give rise to it are: acute appendicitis, lesions of the stomach and duodenum, and affections of the biliary tract.

2. The rationale of treatment and ultimate prognosis are dependent upon the time element involved in making the diagnosis; hence, every effort should be made to arrive at an early one. This should not be difficult if one keeps in mind the history of a previous suppurative, intra-abdominal lesion, gives due consideration to persistent constitutional signs of sepsis, and invokes the early aid of a proper roentgen study.

3. No single method of surgical approach is applicable to all the divisions of the subphrenic space; hence, a knowledge of their boundaries and the proper localization of the abscess by lateral roentgenograms becomes of utmost importance.

4. Early surgical intervention is better practice than delay for mere accuracy in diagnosis. The most successful surgical approach consists of adequate drainage of the subphrenic space involved without contamination of the pleural cavity or an uninvolved portion of the peritoneal cavity. This is best ac-

complished by retro-peritoneal or extra-peritoneal approaches whenever possible.

5. The present mortality of subphrenic abscesses is appalling, but it can be reduced by early diagnosis, by the proper localization, and by the proper appreciation and application of the surgical principles involved in the operative methods already devised.

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LARGE PROSTATE.

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Few diseases produce a more pitiable spectacle or result in a more horrible death than the effects of an enlarged prostate upon an old man. The dangers of the disease will continue to be the same: progressive pain. intolerable frequency of urination. retention of urine with infection and kidney breakdown. Loss of sleep, increased arterial tension, strain upon the heart and finally uraemia take the patient to his grave.

The dangers of the catheter will continue to be the same: tranmatism and infection of the urethra and prostate, seminal vessels, epididymis and kidney, contribute to general sepsis.

The progress made in the management of these old men has reached the point now when it should scarcely be permissible to use the catheter more than a few times for temporary relief preliminary to operation.

The ability to relieve retention of urine three or four times a day constitutes no excuse for declining to advise operation with prostatic hypertrophy to be operated upon. The modern method of handling prostatics and removing the gland cures more than nine out of ten of the disease.

When prostatectomy was dangerous, the use of the catheter was justified. But we can now substantiate the claim that prostatectomy when the patient is not too nearly dead with urinary sepsis, can be performed with little danger, no pain, no gas nor ether anesthesia, and usually with two to five days' confinement in bed and two to three weeks in the hospital.

In 100 consecutive cases of all types of prostatic hypertrophy, with and without attendant disease resulting from urine retention, at least ninety will survive the operation, and the great majority of them will return to their natural habits with complete relief of symptoms.

Of the ten who die following operation, autopsy will show long standing dilatation and infection of the ureters and kidneys caused by delayed operation, and degeneration of the heart muscle with dilatation of the heart from constant straining efforts at urination—preventable by earlier operation.

The handling of these old men requires rigid individualization, thorough interest and sympathy, some skill and great gentleness in every act of every operative procedure. The first essential in their management is to realize that these old men must be permitted to do as nearly as possible exactly as they please. Their personal liberty should not be curtailed, and their habits should not be changed. They should be constantly enconraged to sit up and to walk about. Rigid confinement to bed and much interference with their habits will certainly result in danger. They should be humored, coddled, fed, watered, permitted to smoke, chew, and drink when they please. Such food as they are accustomed to have at home should as nearly as possible be supplied at the hours at which they are accustomed to taking it. They should be kept comfortable, but it is detrimental to irritate them with back-washing, bathing, and constant admonitions from over-educated nurses and doctors as to what they must and must not do. There are many important points to be borne in mind in dealing with the various types of the disease, and with various types of old men.

The great majority of cases of prostatic obstruction are those caused by adenoma of the lobes of the gland. These are large in size, usually accompanied by dilatation of the bladder and the gland is easily removable.

There is another type of moderate enlargement, of hard consistency, made up largely of fibrous tissue, accompanied by sclerosis at the neck of the bladder, thickening of and often contracted bladder.

The third type is carcinoma of the prostate. These, like the fibrous tissue glands, are hard, only slightly enlarged, and extremely tender. They are difficult to remove, and in my observation, have never been cured. They constitute approximately ten per cent of the cases of prostatic obstruction.

There is a fourth type, usually occurring in men in their fifties, characterized by moderate enlargement of the so-called middle lobe. In these cases the gland appears to be normal in

size, but the obstruction appears to result from the small tumor in the prostatic urethra at the neck of the bladder. This has been called the "ball valve" type of obstruction, though I have never seen any sign of valvular action.

The plan of action and the management of these old men with urinary retention has been about as follows: If they consult their doctor before they have retention of urine, suffering with frequency and straining, this is the ideal time to advise operation. The disease is in an early stage, there are few if any complicating factors, the operation is easily performed, the patients are out of bed in three days and home in less than two weeks.

If they consult their doctor for retention of urine, his duty is obviously to relieve the retention, possibly twice, and advise the patient to have the operation immediately. The situation is one of emergency.

When the patient is sent to the hospital, the surgeon should see to it that he is operated upon as soon as is reasonably possible after admission. The patient's general condition should be determined, he should be placed in a comfortable bed and prostatectomy performed as soon as the bladder refills with urine.

The time is past for routine multiple stage procedures for prostatectomy, and for catheterization either intermittently or by the indwelling catheter. It is rarely necessary to practice the old method of preliminary suprapubic cystotomy and later prostatectomy. Complete operation can usually be done at one stage, if it can with safety be done at all. If any patient is unable to stand prostatectomy, it means they have been permitted to go too long with the disease.

With the bladder filled with urine, a small dose of novocaine, 50 mgm., sometimes as little as 25 mgm., introduced into the lumbar portion of the spinal canal, will give perfect anesthesia, and little if any danger to life. A transverse incision is then made through the skin muscles and abdominal fascia, down to the bladder, which is then opened by a small puncture, the bladder emptied slowly of urine, the opening stretched and the interior of the bladder thoroughly examined for stone and other complications. Then with the index finger of one hand introduced into the prostatic urethra and the other into the rectum, the gland is enucleated by the method of Squier, starting in the roof of the prostatic urethra as far forward as the finger will reach and finding the line of cleavage between the gland and its connective tissue capsule. A slow enucleation of the nonmalignant gland can be accomplished without excessive trauma and with little bleeding.

After this is done, a careful examination of the bed from which it was removed is made, and a hot gauze pack snugly introduced into the prostatic bed and held in contact for a few minutes to check capillary oozing. Then the bed of the gland is inspected thoroughly for bleeding. Occasionally a visibly bleeding vessel may be tied or touched with the electric coagulation current.

Secondary hemorrhage, like secondary hemorrhage following tonsillectomy, is usually primary hemorrhage uncontrolled at the time of the operation. Under spinal anesthesia the blood pressure is low, and bleeding may be little; after recovery from the low blood pressure induced by the anesthesia, bleeding may start again.

There are many ways of preventing secondary hemorrhage. In my experience the best method is to pack the cavity left after removal of the gland with a single long piece of dry gauze placed exactly in the right spot under direct vision.

After packing the bed from which the gland was removed, a rubber tube is introduced into the bladder, and the bladder and surrounding tissue snugly closed around it. There are many cases in which the rubber tube might better be omitted. It will restrict the patient's movements in bed, it is sometimes painful, and, to many old men, extremely irritating. Such cases do better without the tube. In any case the tube may be removed at the end of two or three days, and the patient encouraged to sit up.

Very old men, sick or operated upon for any disease, should have special attention on the part of the nurses, and their dressings should be changed sufficiently often to keep them dry.

Frequently, upon going to see a patient after supper, on the day of the operation, I have found him irritable and anxious to sit up, and have immediately removed the tube, sat him up in a chair or stood him on his feet, and in five minutes found him quite pacified, happy, and ready to go to sleep.

It is the rule that within ten days after operation the patient is voiding urine by the

natural route and in another ten days the suprapubic wound has healed.

It is seldom necessary to irrigate the bladder. The patient should be urged to drink large quantities of fluid from the moment he comes under observation, and this serves much better as a means of irrigation to the bladder than by the use of irrigations from below.

It is rarely necessary to pass a sound or any other instrument into the urethra following operation to prevent stricture.

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X-RAY THERAPY.*

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Ever since the epoch-making discovery of X-rays by William Conrad Roentgen, Professor of Physics at the University of Wurtzburg, Germany, December 26, 1896, the importance of X-ray work as an aid to the medical, surgical and dental professions, both from a diagnostic and therapeutic standpoint, has been constantly and steadily increasing.

In studying the development of modern X-ray generating apparatus one is struck by the tremendous changes which have taken place in this field during the past thirty-six years. The static machine was the first type of generating apparatus used. After a few years this was supplanted by the induction coil, which in turn was followed by transformers with mechanical rectification and stabilizers, and, lastly, the large transformers of today with valve tube rectification.

The X-ray tubes have played a vital part in this work. It is a far cry from the earliest tubes used by Roentgen, the old Crooke's tube, dating back to 1878, to the modern Coolidge, Westinghouse and Muller tubes.

Due to the marked improvement and standardization of X-ray machines and apparatus within the past decade, the entire subject of radio-therapy has been put upon a much more scientific basis. Accurate means of measuring dosages, with duplication of results, can now be accomplished.

The chart, taken in part from one prepared by N. S. Amstutz, 1931, Valparaiso, Indiana, illustrates the place of X-rays in the spectrum. It is interesting to note that not until 1912 were X-rays reflected and refracted and given their proper definition as light waves. X-rays are measured in Angstrom units, one unit being one ten millionth (1/10,000,000) of a millimeter.

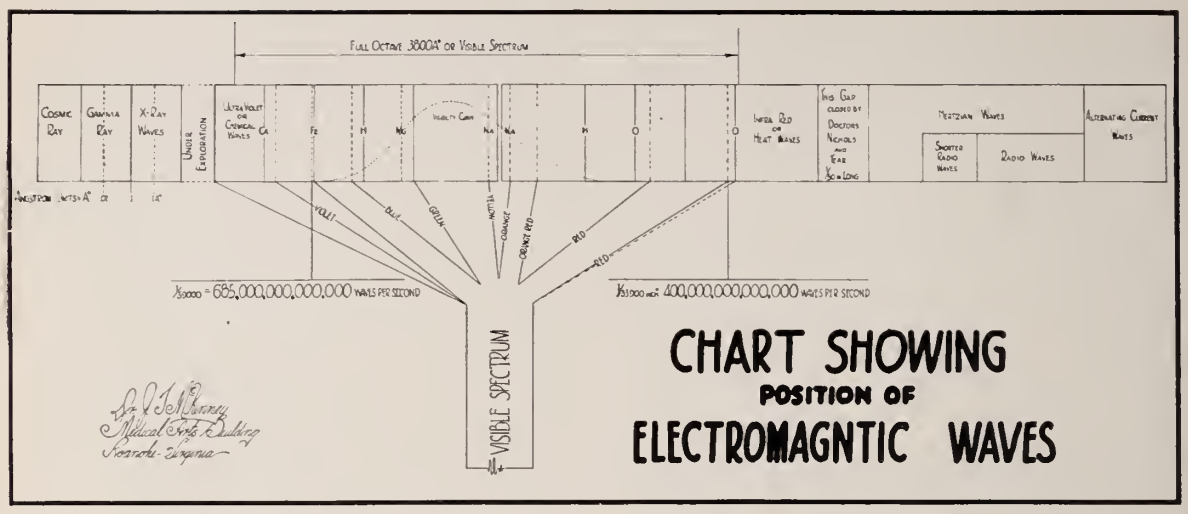
At first X-ray therapy was largely confined to the destructive effect of radiation on superficial malignancy. Later it was discovered that many inflammatory disorders of the skin were amenable to irradiation. The exceptional susceptibility of leukocytes, especially lymphocytes, and the remarkable resolving action of roentgen rays on lesions characterized by lymphocytic infiltration or hyperplasia were demonstrated and proven by continued investigation and study. With this information the scope of radio-therapy became broadened and excellent results were obtained in treating the leukemias, lymphoblastomas and hyperplasia of the thymus gland. The great value of X-ray therapy in the treatment of an enlarged thymus in infants can not be over-emphasized. While not every enlarged thymus is pathological, if the X-ray studies show enlargement and the infant is having any clinical symptoms of respiratory distress, with convulsions, cyanosis and crowing respiration, one or more X-ray treatments should be given.

On the basis of sensitiveness to radiation, tissues and structures may be classified in the order named: Sex glands (testicle and ovary), blood and blood forming organs (bone marrow, spleen, lymph nodes), thymus, skin, mucous membranes, fibrous and connective tissue, muscle, bone, and, lastly, nerve.

In the cell the physical and chemical processes of anabolism, katabolism, absorption, secretion and excretion are continually going on. Exposure to X-rays causes a breaking up of the bonds of molecular activity and may accelerate or retard all of the normal processes of the cell, depending upon the dosages used. X-ray quanta can break electrons away from the nuclei, and can also break the chemical bonds holding the atoms in molecular combinations and thus make possible new combinations, or change the velocity of any chemical reaction that may be taking place. Cells undergoing mitosis and young, rapidly growing cells are more radio-sensitive than mature cells, this being particularly true of cancerous cells.

In rapidly growing cancerous cells there is an irregularity in the cell division, arrangement, and in the character of the cell itself. Thus tissues which in the normal state are insensitive to radiation often acquire a high sensitivity when affected by pathological

*Read before the Roanoke Academy of Medicine, April 4, 1932.



changes and tumor growth. The more vascularized a growth is, the more susceptible it is to radiation, this is also true of tumors of embryonal origin.

Anemia diminishes sensitivity. Engorgement and inflammation increase sensitivity. The more cellular the structure of a tumor, the more sensitive; the greater preponderance of fibrous tissue, the less sensitivity. Cells which have a high secretory function are particularly sensitive to radiation.

The action of X-rays on the circulating blood consists of a primary leukocytosis lasting from a few hours to two or three days, followed by a steadily increasing leukopenia. The leukocytes are destroyed and replaced by connective tissue. In leukemia the great capacity of roentgen rays to destroy lymphocytes and to produce leukopenia is valuable. In the myelogenous form treatment is concentrated over the spleen and marrow of the long bones.

In the treatment of leukemias, dosages of moderate voltages should be used at first, reserving the higher voltages for later treatments. Great harm can be done by injudicious radiation. However, if properly applied, these cases can usually be made comfortable and returned to their daily mode of living and their lives prolonged for several years.

The specific action of roentgen rays on pathological cells in many skin diseases is used with good results. In a recent paper read before the American Medical Association meeting in New Orleans, Dr. George MacKee, the well known dermatologist of New York City, named a list of over eighty diseases of the skin in which he advocated roentgen ray therapy. Among this list we have found the following particularly amenable to X-ray therapy: acne vulgaris, eczema, lichen chronic, lupus vulgaris, pruritus ani, krauros's vulvae, herpes, psoriasis, plantar warts, verrucae, actinomycosis, blastomycosis, erythema induratum, keloids, cutaneous callosities, ringworm of the scalp, beard, body and particularly of the fingers and toes when the nails have been destroyed, epidermophytosis and skin cancers, including the basal cell epithelioma. However, it is important to note that squamous cell epithelioma does not respond readily to X-ray therapy, and should be surgically excised. In all superficial therapy great care must be exercised to prevent telangiectasis and X-ray burns.

The analgesic effect of roentgen rays is well known in metastatic lesions of the bones and chronic arthritis of the spine. X-ray is useful in inguinal adenitis, tubercular adenitis and parotitis, and in the latter two conditions is the most approved method of treatment. Tubercular arthritis and chronic osteomyelitis are benefited. Formation of callus is stimulated in old ununited fractures by mild dosages. In the last few years, excellent results have been obtained in acute infections, more especially erysipelas, cellulitis, lymphangitis, carbuncles and furunculosis. Marked benefit has been obtained in treating the spasmodic stages of whooping cough in children, usually one or two treatments being sufficient to relieve the distressing symptoms.

Very recently congenital pylorospasm in in-

fants has been reported as relieved in many instances by X-ray treatment, and should be tried before an operation is advised.

In chronic mastitis accompanied by considerable enlargement and pain, good results have been acheived. Dr. Carter, of the Bigelow Clinic, Manitoba, has reported the largest series of cases successfully treated. Most excellent results have been obtained in treating many cases of toxic adenomata and exophthalmic goiter, and this field of roentgen-ray therapy offers many advantages.

Giant cell tumors of the bone, endothelioma, myeloma of the bone, osteogenetic and osteolytic sarcomas and many other bone lesions are showing good results with radiation therapy.

The specific action of the rays on the spermatogonial cells of the testis and follicular epithelium of the ovary has been utilized to relieve hemorrhagic conditions and fibromyoma of the uterus and teratoid tumors of the testis. The results obtained in the above type of cases justifies a more general application of X-ray therapy.

The deeper seated malignancies of the brain, neck, chest, mediastinum, abdomen, urinary tract, bladder and prostate, cervix and uterus, lympho-sarcoma, Hodgkin's disease and many other types of cancer, both primary and metastatic, should be treated with X-rays of high penetration ranging from 160,000 to 200,000 KV peak voltage or higher degrees of penetration. It is most important in all X-ray therapy to remember that the absorption of X-rays is just as important as the penetration. The regulation of dosages, the use of the proper filtration, and the repetition of treatments, bearing in mind the absorption curve, must be carefully studied by the radiologist and a method of treatment outlined for each case.

Many clinics advocate both pre-operative and post-operative roentgen-ray therapy for breast cancers. When it is impractical to give a course of X-ray therapy before operation, all cases of cancer of the breast should have the benefit of X-ray therapy following operation. Six areas should be treated—the right and left supra-clavicular regions, right and left mammary regions, and right and left axillary areas, with an occasional treatment through the post-clavicular area. We prefer the technique as used by Dr. DesJardins at the Mayo Clinic, using moderate voltage, 135,000 KV with six millimeters of aluminum filter. In the inoperable malignancies of the breast and metastatic recurrences, higher voltages up to 180,000 or 200,000 peak KV should be used.

The application of radium and X-ray therapy should be combined in a great many cases, this being particularly true in cancer of the cervix and bladder, the malignancies of the tongue, larynx, nasal passages, brain tumors, and numerous other parts of the body.

Although in a short paper we have only been able to mention a few of the commoner lesions treated, the judicious use of X-ray therapy has added a most valuable aid to our armamentarium in the treatment of a vast number of conditions and diseases.

Medical Arts Building.

INTUBATION—A SUPPLEMENTARY MEASURE IN THE TREATMENT OF LARYNGEAL STENOSIS DUE TO DIPHTHERIA AND OTHER CAUSES.*

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History

As early as the beginning of the Christian era Hippocrates mentioned the introduction of sounds into the larynx for the relief of difficult breathing; however, it was not until 1858 that Bouchut devised a tube simulating our modern one which was made of silver and almost cylindrical in shape, which he introduced into the larynx by a sound and held by a silk thread for removal. Modifications of intubation of the larynx were reported by Chiari, Brown-Sequard and Bergman, and in 1885 Frank Waxham intubated a child sixteen months old. Joseph O'Dwyer, of New York, was the first to perfect the technic and instruments for satisfactory results, and those used in performing this operation today are the same as devised by him, with only slight modifications.

Indications

Obviously there is but one indication for intubation, and that is laryngeal stenosis, but since there are several pathological processes producing this condition, and several physical signs which go to make up the picture of laryngeal obstruction, it is well to consider here, the outstanding physical signs to be borne in mind when deciding whether or not instru-

*Read before the Wise County Medical Society at Norton, Va., February 17, 1932.

mentation is necessary. First of all, indications should be considered early in the disease, and intubation not used as a last resort. Every physician under whose care comes the treatment of diphtheria should familiarize himself with the cardinal signs of beginning laryngeal obstruction, the following being some of the most important:

1. Extreme restlessness with impeded respiration and beginning loss of voice.
2. Anxious expression; moist and clammy skin and dyspnea.
3. Retraction above and below the clavicles and of the diaphragmatic portion of the chest during inspiration.
4. And, lastly cyanosis.

In O'Dwyer's own words the indications for intubation are: "Marked by a more or less sinking in of the yielding portions of the chest, lower ribs and sternum, episternal notch and supraclavicular regions during inspiration. Recessions at the root of the neck are more significant than those below, as violent contractions of the diaphragm aid in drawing in the free border of the ribs and sternum. Abiding cyanosis is too late a symptom to wait for. Children sometimes remain long in one position when suffering severely from want of breath, and continued restlessness, if consciousness be unimpaired, is, therefore, an important indication that it is time to afford relief."

Technic of Operation

The operator has the choice of having the patient in one of two positions. He may be placed in a sitting posture in the lap of an assistant, or in the dorsal or horizontal position on a table with the head slightly elevated. Preferring the latter myself, it requiring the least amount of assistance, we will use this position for our illustration. First, the arms should be tightly bound to the thorax by what is known as the "mummy bandage," which is nothing more than a sheet wrapped tightly around the child. At least two assistants are necessary, one at the head of the table to keep the head stationary, and one on the left side to steady the shoulders. The instruments—consisting of the correct size tube threaded with about 18 inches of doubled heavy silk, intubator attached, mouth gag, tongue depressor and extubator—should be sterilized and placed on a table near by. The operator stands on the right side of the table, and, the mouth gag having been introduced well back on the molar teeth, he introduces the extended index finger of the left hand to the back of the tongue and on down until the epiglottis is felt, which is now pulled gently forward. The tube, by means of the intubator, is now introduced along side of the left index finger, vertically at first, along the surface of the tongue until the tip of the tube comes in contact with the left index finger as it rests on the arytenoids. Here the handle of the introducer should be turned abruptly upward, in order to bring the tube to a horizontal, or even beyond a horizontal position, as it enters the larynx. If the handle is not elevated at this point, the tube is apt to enter the esophagus instead of the larynx. The tube is now gently pressed down into the larynx and the introducer rapidly removed, the tube being held in place by the left index finger. After the guiding finger has been removed, having made sure that the tube is pressed well into place, if a successful intubation has been done, the above procedure will be followed by deeper respiration, a cough and a tubular metallic sound of the air rushing through, and almost immediately the anxious expression of the child is gone and practically normal breathing is restored. If the tube has entered the esophagus, no cough will be heard, and respiration either will be worse or unimproved. After we are reasonably sure that the tube is in the larynx and unobstructed, the thread may be removed, or pulled to the left side of the mouth and fastened to the cheek with adhesive. The tube is removed on the second, third or fourth day, depending on the individual case.

The technic of removing is similar to introduction. The extubator is passed into the lumen of the tube, the jaws spread apart and the tube gently pulled upward. It is wise to have a tube ready to be introduced again, should asphyxia follow extubation.

Comparison of Intubation and Tracheotomy

1. Intubation requires no anesthetic.
2. Leaves no scar.
3. There is less danger of post-operative pneumonia.
4. Requires less nursing care.
5. Summed up in one word, it is "safer."

Tracheotomy has preference over intubation only when:

1. Intubation tubes are not at hand.

2. When the laryngeal edema is widespread.

3. In cases where there is excessive membraneous exudate below the larynx.

Intubation is, however, not without danger, and in choosing the lesser of the two evils. we must consider some of the accidents that may ensue:

1. Some diphtheritic membrane may be forced ahead of the tube during intubation. Should this happen, the tube should immediately be removed and an attempt made to get the patient to cough up the membrane and the tube reintroduced.

2. Post-operative pneumonia, which is treated as pneumonia elsewhere.

3. Coughing up of tube. This may be due to the selection of too small a tube, in which case the next larger size should be used.

4. Ulceration of larynx due to pressure of a tube that is too large.

There are several other causes of stenosis of the larynx which might require intubation, and these will be mentioned in passing:

1. Cicatricial stenosis due to injury from syphilis and trauma.

2. Narrowing of the space, both above and below the vocal cords, due to inflammation.

3. For cure of granulation resulting from long continued use of tracheal cannulae.

4. In papillomata of the larynx.

5. Deformities of the larynx from disease or injury.

6. Ankylosis of the crico-arytenoid articulation.

Post-Operative Feeding

The Casselberry method is usually the method of choice, which is essentially as follows: The patient is placed on the back, the head being somewhat lower than the shoulders, and food is given slowly with a spoon or nursing bottle. Nasal feeding may have to be resorted to, but this is not the rule. Foods during the period tube is being worn consists of liquids and semi-solids.

Case Reports

Case 1.—B. D., white, male, age 4½ years. Taken sick September 30, 1931, and seen by family doctor next day, who gave him 10,000 units of diphtheria antitoxin same day, and 10,000 more the following morning.

On October 2nd, I was called in to see the boy by his family doctor about 2:00 P. M., the doctor informing me over the telephone he felt that a tracheotomy would be necessary. I took the necessary equipment to do a tracheotomy and also an intubation set. At the time I first saw the child he had all the signs of laryngeal stenosis, as previously stated. We intubated the boy with a size 4-5 year tube, and almost immediately he began to breathe better. We removed the tube October 4th, two days later. The recovery was uneventful.

Case 2.—E. B., white, male, age 2 years, referred to hospital by family doctor on November 9, 1931, with a diagnosis of laryngeal obstruction, due probably to a foreign body. The parents said the child had been unwell for several days, and gave an indefinite history of having swallowed a safety pin. On examination of the child's throat a definite grayish membrane was seen on both tonsils, more marked on the left side, which was very adherent. The child's temperature at that time was 101.6 F., and a diagnosis of diphtheria was made at the time. The laryngeal symptoms were, however, not then pronounced, but as the people lived some forty miles away, we decided to admit the child to the hospital for observation. He was isolated, and given 10,000 units of diphtheria antitoxin. About 10:00 P. M., he began to show more marked signs of laryngeal involvement and he was intubated at that time with a 2 year size tube. From this he obtained immediate relief, and slept very well through the night. The next morning his condition was fair, but about noon he seemed not to be doing so well, and a medical man was called in. He expressed the belief that the child's heart was weakening, and gave supportive treatment. General condition gradually became worse and the child died about 10:30 P. M., not, however, from laryngeal obstruction, but from toxic heart disease.

Case 3.—E. T., white, male, age 4 years. Father came to office on November 12, 1931, saying that his boy was "choking to death," and needed attention right away. Besides the intubation set, we took the instruments to do a tracheotomy to the patient's home. The family stated that the child had been sick for several days, but had become much worse the night before, and had been unable to get a doctor. The family doctor was at my office at the time the father came in, and he went along. The child showed marked laryngeal obstruction when first seen, and we attempted an intubation with a size 3 year tube, but were unable to get the tube into the larynx. This

necessitated an emergency tracheotomy, which we did on the kitchen table, without any anesthetic, and inserted a No. 3 Jackson tube. The breathing immediately became better, and the parents were instructed in the usual nursing care of tracheotomy patients.

The patient was dressed every day, and an attempt was made on the fourth day to remove the tube, but, as soon as same was done, the breathing was so difficult that the tube was replaced. On the seventh day following operation, the No. 3 tube was replaced with a No. 2 size tube and family was instructed to hold a finger over the opening of the tube at frequent intervals in order that patient might become accustomed to breathing through the larynx again. The smaller tube was removed on November 21st, nine days from day of operation, and he returned to the office every other day for dressing, and was discharged as cured about a week from date of removal of tube.

Case 4.—L. W., white, female, age 4½ years. Taken sick January 26, 1932, but not seen by family doctor until January 29, 1932, at which time he made a diagnosis of diphtheria and gave the child 20,000 units of diphtheria antitoxin. I was called about 8:30 A. M., January 30, 1932, by the family doctor, who expressed the opinion that instrumentation would be necessary and desired that I see the case with him. We saw the case together about 10:30 that morning and decided that intubation was indicated. Using a size 4-5 year tube, we intubated the child. After introduction of the tube, the child's color and breathing became normal, and before we were ready to leave the house the baby was asleep. Extubation was done on February 2nd, three days later, and recovery was uneventful.

Case 5.—E. R., white, male, age 3½ years. Taken sick February 4, 1932, but not seen by family doctor until February 7th, three days later, at which time a diagnosis of diphtheria was made and 20,000 units of diphtheria antitoxin given. Seen again the next day by family doctor and given 20,000 more units of antitoxin.

I was called about 7:00 P. M., February 8, 1932, by family doctor, who stated he felt that if something more was not done for the child he would die. We saw the boy about 9:00 P. M., February 8, 1932, and decided an intubation was indicated. This we did at that time, using a 3 year size tube, which relieved the child of his dyspnea, and before leaving the home we gave him 10,000 more units of antitoxin, making 50,000 in all. The tube was removed about 11:00 A. M., February 11, 1932. The child seemed to be doing fine until 4:00 P. M. that day, when he developed more symptoms of obstruction, and the father brought him to the hospital. We intubated him again with the same size tube about 9:00 P. M., and admitted him to the hospital. He rested well that night, and up until about 11:00 A. M. the next day, when he coughed up the tube. He remained in good condition until 1:30 P. M. the same day, when signs of obstruction again appeared. At this time he was intubated again with a slightly larger tube and the respiration remained good. The child became very restless and uncomfortable, however, later on in the afternoon and that night I called in another throat man, also an internist, and they both agreed that the obstruction was sufficiently relieved, and advised an increase in the amount of sedatives. This was done, and the next day the general condition was somewhat improved. Condition gradually improved and tube was removed on February 13th, and the patient was allowed to return home two days later.

Conclusions

1. Intubation is an emergency operation and a life-saving procedure.
2. Intubation should have preference over tracheotomy, since it is quicker, less annoying, and safer for the patient.
3. Signs of laryngeal obstruction should constantly be kept in mind in all cases of diphtheria, and instrumentation performed early.

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800 *Park Avenue.*

"'TAINT"

'Taint what we have,
But what we give;
'Taint what we are,
But how we live;
'Taint what we do,
But how we do it—
That makes this life
Worth going through it.
—*Selected.*

GULL'S DISEASE, ADULT SPONTANEOUS MYXEDEMA, ACCOMPANIED BY SIGNS OF PLURIGLANDULAR ENDOCRINE INSUFFICIENCY (THYREO-GENITO-HYPOPHYSEO-SUPRARENAL SYNDROME). DISCUSSION OF DIFFERENTIAL DIAGNOSIS.*

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When a patient presents symptoms referable to disturbances of the functions of more than one endocrine gland, the question often arises as to whether one has to deal with an affection that is primarily and predominantly monoglandular disease with secondary disorders of other glands, or with a disorder that is due to simultaneous involvement of several glands. The difficulties are well illustrated in the case here reported, the clinical history of which has been carefully summarized for me by the clinical clerk, Mr. Baptisti.

Clinical History

Daisy B., housewife, age 52, was admitted to the Osler Clinic (service of Prof. Longcope), on January 4, 1932, complaining of "great weakness, loss of weight, headaches, feeling cold, dizziness, and stomach trouble."

Previous History.—Except for childhood diseases, the patient was a healthy woman until the onset of the menopause (seven years ago), when, in addition to the cessation of the menstrual periods, she began to experience a variety of symptoms, including progressively increasing weakness, marked nervousness, and changes in weight (a gain at first to 148 pounds with subsequent progressive loss of weight). About three years ago there was some general swelling of the body and, on consulting a physician, she was told that she had Bright's disease and that her blood pressure was high. Under treatment, the character of which has not been learned, the swelling largely disappeared, though there have been recurrences of swollen eyelids, hands and legs. She has had right-sided headaches, occasional dizziness, pains in the upper abdomen, chronic constipation and hemorrhoids. She grew pale and sallow and the hair in her axillae fell out. For the past three months she has noticed central swelling of the abdomen on standing, or when rising from the recumbent to the sitting position. She gradually grew so thin and weak that she scarcely ever left the house, and recently has been lying down much of the time. All her teeth were extracted in the hope of improving her condition; two of them were quite loose. One month ago, she asserts that there was blood in her urine for four days. Two days before admission, she had a dizzy spell, in which she fell and hurt her ankle.

Physical Examination.—Height 63¾ inches; weight 108¼ pounds (23 pounds under calculated ideal weight); temperature 99.4°; respiratory rate 24; pulse rate 60; blood pressure 175 systolic, 90 diastolic, falling after a few days' rest to 155 systolic. Spontaneous movements few and slow; psyche dull and apathetic; speech slow; voice coarse and masculine (not so before menopause). Skin dry, rough, scaly; marked rugæ in forehead and neck; slight yellowish brown pigmentation; atrophy of subcutaneous fat except over backs of hands and feet. Nails of paper-shell type; brittle. Keeps herself warmly covered in bed.

Marked hypotrichosis (total loss of hairs in axillae and over trunk and extremities; crines sparse; hair of scalp retained except some loss at junction of neck and occiput).

Marked enophthalmos; narrow lid-slits (Fig. 1); wrinkled eyelids; pupils react normally. Pallor of mucous membranes. Tongue very large. Moderate bilateral impairment of hearing. Thyroid not palpable. Chest negative except for slight enlargement of heart and accentuated aortic second sound. Peripheral arteries somewhat thickened; retinal arterioles constricted.

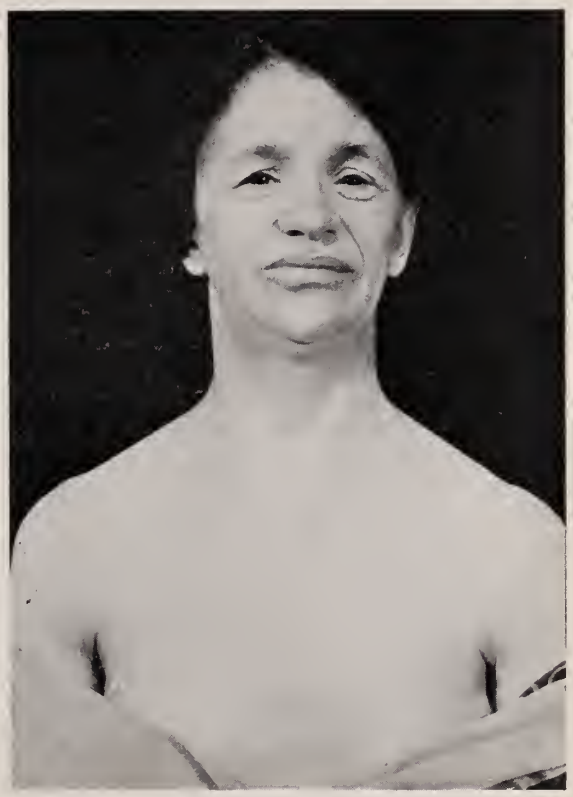

Fig. 1.—Anterior view of patient.

Marked diastasis of Mm. recti abdominis with bulging on sitting up. Abdomen otherwise negative except for palpable liver edge and slight tenderness in right upper quadrant. No ascites. Hemorrhoids present. Uterus small.

No paralyses; no objective disturbances of sensibility, though paraesthesia of hands and feet are complained of.

Deep reflexes normal; Babinski tests negative; abdominal reflexes not elicited; Chvostek +; Trousseau suggestive on right side.

Laboratory Tests.—*Blood:* R. B. C. 3,800,000; Hb. 75%; W. B. C. 5,000; differential count normal; WaR. 0; N. P. N. 31 mg. %; blood sugar 80 mg.%; blood calcium normal; NaCl 544 mg. %; blood cholesterol 600 mg. %; later 333 mg. %; total protein 6.56 gm. %; A/G ratio = 62/38.

*Clinical Lecture to the Senior Students of the Johns Hopkins Medical School, January 28, 1932.

Urine: No oliguria nor polyuria; trace of albumin; no casts; no blood.

Stomach Contents: Apparently achylia gastrica (test not satisfactory, to be repeated).

Feces: Negative.

Basal Metabolic Rate: Marked retardation; minus 50% (January 6th), minus 39% (January 9th), minus 40% (January 14th). All these tests were satisfactory, with pulse-rate of 48 to 52.

Glucose Tolerance Test: Slightly increased tolerance.

Insulin Tolerance Test: Within normal limits.

Electrocardiogram: Normal sinus rhythm. Sinus bradycardia. Very low voltage in all leads, so that P-waves are scarcely distinguishable; T-waves isoelectric.

X-Ray Examination.—*Chest:* Some areas of fibroid infiltration with calcification pointing to residuals of earlier tuberculous infection.

Tele.: M. R. 5 cm.; M. L. 9 cm.; aorta 5 cm.; T 26 cm.

Skull: Sella normal; small areas of osteoporosis in parietal region; no evidence of fracture of base of skull.

Discussion of Endocrine Findings

Thyroid.—In favor of the idea of *hypothyroidism* are (1) the very low basal metabolic rate and the bradycardia, (2) the dry, rough, scaly skin with pudgy hands and feet and brittle nails and with rugae in forehead, eyelids and neck, (2) the non-palpable thyroid, (4) the large tongue, (5) the slowed movement and thought, and (6) the history of marked swelling of the skin suggestive of myxedema. Though the patient was temporarily over-weight soon after the onset of the menopause, she is now twenty-three pounds below calculated ideal weight and there is marked loss of subcutaneous fat.

Parathyroids.—In favor of the idea of slight *hypoparathyroidism* are the definitely positive Chvostek sign and the suggestive Trousseau (to be tested regularly over a period); but the content of the blood in calcium is said to be normal.

Suprarenals.—In favor of the idea of *insufficiency of the suprarenal cortex (interrenal system)* are the profound asthenia, and the slight generalized yellowish-brown pigmentation of the skin. Against any marked insufficiency of the suprarenal medulla (and chromaffine system) is the existence of arterial hypertension.

Gonads.—In favor of the idea of *hypogenitalism* is the picture of eunuchoidism (small breast development, hypotrichosis, change in voice) that the patient exhibits. She has never had good breast development, a fact that suggests some lack of internal secretion of the ovaries in earlier life. But the other features of eunuchoidism have appeared only since the menopause and, of late, we have become sceptical of the existence (in women) of a *primary* late eunuchoidism due to gonadal insufficiency, since surgical removal of the ovaries after the menopause does not produce it. It seems now established that the two principal hormones that the ovaries manufacture are (1) *folliculin* (which is produced by the theca cells of the ovarian follicles and has, in animals, to do with putting them "in heat," causes the preliminary proliferation of the uterine mucosa before menstruation, and stimulates the development of the secondary sex-characters, including the breasts and other anti-masculine features), and (2) *progestin*, or *lutin* (which is produced by the granulosa cells of the corpora lutea and has to do with the pre-gravid transformation of the uterine mucosa and exerts a protective influence upon the early stages of pregnancy). But the manufacture of these two ovarian hormones seems to be stimulated by two of the hormones made by the anterior lobe of the hypophysis cerebri, namely, (1) anterior lobe hormone A, dominating the manufacture of folliculin and (2) anterior lobe hormone B, dominating the manufacture of progestin. Any excesses of hormones A and B are excreted in the urine as prolan A and B. The ovarian hormones, in turn, appear after their production to have some regulatory influence upon anterior lobe activity.

In normal conditions, as B. Zondek has shown, the menopause goes through three stages:—(1) a first stage in which large quantities of folliculin are produced (poly-folliculine or polyhormonal stage); (2) a second stage in which folliculin is no longer produced or only in small amounts (oligofolliculine stage), the stage in which appear the characteristic vasomotor phenomena (hot flushes, sweats, palpitation, feelings of oppression, air hunger, variable moods, irritability, etc.); and (3) a third stage in which the ovarian function practically disappears, folliculin is no longer demonstrable in the urine, the uterus atrophies, and the vasomotor phenomena of the menopause die down, but there is a marked production of anterior lobe hormone A and this is demonstrable in large quantities in the urine (polyprolan stage).

One strange feature in this patient is the persistence of the menopausal vasomotor symptoms for seven years! It will be of great

interest to determine, both qualitatively and quantitatively, her production of folliculin and of prolan A at this time, and Dr. Harrop is about to undertake this study.

Hypophysis Cerebri.—Is there evidence of *hypohypophysism (hypopituitarism)* in this patient? Certainly, previous to the menopause there were no symptoms to suggest it. And since the menopause, there has been no evidence of disturbance of the functions of the posterior lobe and pars intermedia, unless the arterial hypertension could be thought to point to excessive activity, which seems improbable. Moreover, there has been no marked polyuria nor oliguria suggestive either of diminished or of excessive production of pituitrin.

When we consider the functions of the anterior lobe of the hypophysis, however, it is time to pause. For the clinical picture has many features in common with those of anterior lobe deficiency of the type described as *hypophyseal cachexia* or *Simmonds' disease.* It will be recalled that in the latter syndrome, there gradually develops a severe cachexia with marked emaciation and loss of weight, characterized by disappearance of the subcutaneous fat and associated with pallor and wrinkling of the skin, anaemia, falling out of the hair and teeth, atrophy of the internal organs (splanchnomikria), regression of the secondary sex characters, profound asthenia, alterations in the psyche and marked retardation of the basal metabolic rate. There are so many co-incidences here with the clinical picture of the patient under description that the assumption of anterior lobe insufficiency has, to some of our internists, seemed plausible. Possibly, the quantitative determination of the anterior lobe hormones A and B (prolans in the blood-serum and in the urine) may corrobate this view. One cannot help but wonder whether the hypophyseal cachexia, if it should be proven to exist, could be wholly or in part responsible for a hormonal situation that is characterized by failure of disappearance of the vasomotor menopausal disturbance through the long period of seven years.

Possible Pathological-Anatomical Basis of the Polyglandular Deficiency

That there is deficiency of the function of a whole series of endocrine glands in this patient can scarcely be questioned. One must next ask the *nature* of the malady with which we are dealing. Have we to deal with a *primary outspoken involvement of one gland (thyroid; or hypophysis)* with secondary (functional) disturbance of the other glands; or are we confronted with a *pathalogical-anatomical process that has simultaneouly involved all the glands that seem now to be functionally deficient?* The term *pluriglandular insufficiency*, though correctly descriptive, might have any one of a series of pathological-anatomical maladies as its basis. Some of the possibilities may now be discussed. Among those that should be considered are (1) the predominantly monoglandular maladies (with secondary changes in other glands), including (a) Gull's disease, (b) Simmonds' disease, and (c) late eunuchoidism, and (2) pathological processes simultaneously affecting multiple glands of which the best known example is the sclerosis of the endocrine glands designated by Falta as *multiple Blutdrüsensklerose.*

That we might be dealing here with an ordinary case of *Gull's disease* (spontaneous myxedema of an adult) ought to be kept in mind as a possibility. Certainly, there is, and has been, myxedema, the thyroid gland is not palpable, there is enophthalmos with narrow lid-slits, the patient complains all the time of feeling cold, there have been characteristic trophic changes in the ectodermal structures (skin, nails, hair, teeth), the tongue is very large, the hearing is impaired, there is apathy with slowing of thought and speech, the voice is altered, there has been chronic constipation, there is early atherosclerosis with moderate arterial hypertension, there is marked bradycardia, the low voltage in the E K being like that met with in myxedema (B. Zondek; G. Cori), and, above all, there is profound retardation of the basal metabolic rate. The onset of the malady at the time of the menopause is often seen in spontaneous myxedema of adults. In some cases of myxedema there are secondary phenomena referable to the hypophysis, the parathyroids and the gonads. It will be very interesting, indeed, to see how many of the clinical symptoms in this patient disappear under the continued administration of thyroid extract.

The possibility of *Simmonds' disease* (hypophyseal cachexia), due to primary destructive lesion of the anterior lobe of the hypophysis cerebri, the symptoms of which have been mentioned above, has been considered, but the sella turcica looks normal in roentgenograms, typical myxedema and symptoms of suprarenal

insufficiency are foreign to the symptomatology of hypophyseal cachexia, and, furthermore, most cases of Simmonds' disease are preceded by some rather definite infectious process.

A *primary late eunuchoidism* can scarcely be assumed to exist and to account for the symptoms in this patient, for this malady occurs almost exclusively in males; the symptoms of so-called eunuchoidism here must, I think, be secondary rather than primary.

We ought not to decide without further studies that *sclerosis of multiple endocrine glands* (Falta's *multiple Blutdrüsensklerose*) is not present in this patient. The symptoms that point to concurrent involvement of the hypophysis, the thyroids, the gonads, the suprarenals and the parathyroids are certainly suggestive. Moreover, hypercholesterolaemia, hypoglycaemia, and achylia gastrica have all been observed in cases of Falta's disease. If, however, the patient should improve markedly under thyroid and hypophyseal therapy, the fact would be strongly against the diagnosis of Falta's disease.

This case affords manifold opportunity for further clinical, especially biochemical, studies, and for therapeutic research. Dr. Harrop tells me that these studies will be undertaken at once and, doubtless, a full report of the results of these will be published later on.*

*Note.—Two weeks after this clinic was held, Dr. George A. Harrop reported that the patient had been placed upon three grains of thyroid extract daily for one week, that her basal metabolism then showed far less retardation (minus 13% only), and that she had shown great improvement in all her subjective symptoms. He thought that these results, so quickly achieved, made it seem very probable that most of her malady may have been due to insufficiency of the thyroid.

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AGRANULOCYTOSIS WITH REPORT OF CASES.*

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Roberts and Kracke, of Atlanta, have presented a report of blood counts on 8,000 cases, and have proposed an interesting classification of the granulopenias to include a number of conditions having in common a diminution or absence of granulocytes from the blood, preceded by an inhibition, partial or complete, of myelocytic activity in the bone marrow.[1] No satisfactory explanation for the inhibition of the bone marrow has been offered, but if these varied conditions have anything in common from an etiological standpoint, a study of them from this angle will be most helpful.

Interesting factors brought out by Roberts and Kracke are that the life of the granulocyte is only four days, and that a patient cannot live longer than about seven days without them. The classification of these authors with case reports illustrating three types follows.

No conclusions are drawn from these cases, but they were thought worthy of report and of particular interest from the fact that each presented an absence of granulocytes.

The Granulopenias

1. Acute granulopenia of unknown cause.
2. Chronic granulopenia of unknown cause.
3. Acute agranulosis with or without resulting sepsis.
4. Acute recurring agranulosis with or without resulting sepsis.
5. Chemical granulopenia due to chemical poisons, as benzol and arsenic.
6. Septic granulopenia, the result of general or localized septic processes.
7. Irradiation granulopenia, the result of exposure to roentgen and radium rays.
8. Anemic granulopenia, the condition accompanying certain splenic, aplastic, and pernicious anemias, acute aleukemic lymphatic leukemia, lymphatic leukemia and certain anemias with bizarre proportions of the lymphocytes and monocytes.
9. Infectious granulopenia, the condition accompanying certain acute diseases as typhoid, typhus, measles, mumps, malaria, influenza, dengue fever, and certain pneumonias.
10. The granulopenia of roseola infantilis, also called exanthem subitum.

Case 1.—Mrs. W., a rather stout woman, aged 44, with an unimportant family history, had been healthy all her life. On August 24, 1927, she complained of pain and aching in the epigastrium. Four or five days later she suddenly developed sore throat and fever. The next day she appeared quite toxic, the throat was intensely congested and the tonsils covered with a dirty gray membrane. The cervical glands were swollen. A throat culture was negative for diphtheria, but positive for Vincent's angina. Blood examination showed leukocytes 3,000, with 10 per cent polymorphonuclears. Ten thousand units of diphtheria antitoxin was given with no effect. The next day the patient was in a more toxic condition. A tenacious dirty membrane covered both tonsils, pillars, and hard palate. The cervical glands were more enlarged and tender. There was an icteric tint to the skin and the spleen was palpable. In addition to the sore throat the patient complained of pain over the tibias. The blood showed 2,000 leukocytes, with 2 per cent polys. The following day the patient was comatose and the leukocytes were below 1,000, with no polys present. Blood culture was sterile, and the patient died ten days after the onset of the disease. Neoarsphenamine was given intravenously without benefit. This case is rather typical of agranulocytic angina, which is the only condition in this group which has been prominent in the medical literature.

Case 2.—C. J., a well developed female, aged 3, was a full term healthy baby weighing eight pounds at birth. She developed normally and passed through measles uneventfully at the age of 2. January 1, 1932, her mother noticed that she was not gaining weight, and that she became pale and lost strength. A month later she developed sore throat which was diagnosed diphtheria and 50,000 units of antitoxin was given in forty-eight hours. The throat cleared up promptly, but she continued pale, the abdomen became distended, and she grew progressively weaker.

She was admitted to the hospital April 15, 1932. Physical examination showed an extremely weak and ill child. There was an intense pallor of the skin. Eyes, ears, nose, mouth, and throat were negative save for pallor of the mucus membranes and sordes. The

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heart rate was rapid and the heart tones were soft and very faint. There were no murmurs or enlargements. The lungs were clear. The abdomen was markedly distended and a large slightly movable mass was felt extending from the costal margin to the level of the umbilicus. X-ray confirmed our impression of splenic tumor. The liver was felt 5 cm. below the costal border. A few hemorrhagic spots were seen on the legs, otherwise physical examination was negative. Urinalyses were negative. Blood count, April 15th, showed erythrocytes 1,810,000; hemoglobin 15 per cent; leukocytes 6,400, with 100 per cent small mononuclear lymphocytes, marked achromia, anisocytosis and poikilocytosis, and marked diminution of blood platelets. On April 17th, a transfusion of 250 c.c. of citrated blood was given. There was no reaction and no improvement. On April 19th, the count was—erythrocytes 1,780,000; hemoglobin 15 per cent; leukocytes 5,700, with 100 per cent small mononuclears. The temperature range was from 100.1 to 103.6 while in the hospital. The patient was sent home April 20th, and died two days later. No autopsy was permitted. Our diagnosis was aleukemic lymphatic leukemia. This case illustrated the anemic type, and one wonders if the large dose of antitoxin could have contributed to the bone marrow depression.

Case 3.—J. P., a boy, 19 years old, who had had the usual childhood diseases, was extremely ill in the summer of 1931 with a streptococcic sore throat, followed by streptococcic pneumonitis, empyema and a positive blood culture for the hemolytic streptococcus. In this illness no abnormal white cells were seen, the polys ranging from 70 to 86 per cent, along with the development of a mild secondary anemia. In the winter of 1931-32 he had chills on three occasions, followed by elevation of temperature for several days, but no blood examination was made. On March 28, 1932, he was admitted to the school infirmary on account of rectal pain. Proctoscopic examination showed a small rectal fissure and he was sent to the King's Daughters Hospital for dilatation of the sphincter. However, on admission to the hospital March 31st, he developed temperature of 100.4, sore throat, cough, and a chill, followed by sweating.

Physical examination showed the mucous membranes of the nose and throat intensely congested. There was no exudate. The lungs were clear. The heart rate was 96 and the respiration was 22. Examination was otherwise negative. The blood count showed leukocytes 4,000, with polys 36 per cent, small monos 58 per cent. The next day the temperature was normal in the morning, but rose to 102 with chills and sweats in the afternoon, and the blood count showed leukocytes 4,650, polys 0, small monos 89 per cent. The following day the temperature rose to 103.8. He had nose bleed and developed a rash over the buttocks and back, somewhat suggestive of pemphigus. The polys were 4 per cent. The following day his temperature was 103.2, he had a severe nose bleed, chills and sweats, and his condition did not seem so favorable; however, his poly count had risen to 30 per cent. The next day he appeared much better and steadily improved. His febrile period lasted six days, and the day after his temperature became normal his poly count was 39 per cent. A week later he was discharged apparently well and his polys had risen to 54 per cent. A count ten days later showed a poly count of 53 per cent.

Blood cultures and agglutination tests for the typhoid group, typhus, undulant fever, and tularemia were negative. Blood examinations for malaria were also negative. Culture from a pustule at the height of the skin rash yielded staphylococci. Urinalyses were negative save for a few red blood cells during the febrile period.

This case illustrates infectious granulopenia occurring in the course of an acute respiratory infection. It would be interesting to know if this patient had any granulopenia while a patient in the school infirmary, but no blood examination was made at the time. The question of recurrence also comes up in this case. One might also ask what effect, if any, his streptococcic infection eight months before had in the production of his granulopenia.

Summary.—Roberts and Kracke's classification of the granulopenias has been quoted and cases illustrative of three groups reported.

Conclusions.—No conclusions have been attempted, but the theory of Roberts and Kracke that a common factor is involved in this group has stimulated this report. The possible effect of a large dose of antitoxin in one case and of a streptococcic infection on another case is of speculative interest.

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THE COEXISTENCE OF ALEUKEMIA LEUKEMIA AND TUBERCULOUS ADENITIS.

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Eighty-six years ago Virchow identified the disease leukemia. Some years later he discovered that there were two types: splenic and lymphatic. Since then much knowledge has accumulated with regard to this disease, other types having been identified and various phases of the disease having been observed.

The etiology of leukemia has been ascribed to disorders of metabolism, toxic conditions, infections, etc., but authorities have as yet failed to reach a common agreement as to the underlying cause. MacCallum considers it a new growth of the blood forming organs. Ward, on the other hand, believes leukemia is due to a specific infection.

In a review of 256 cases of chronic lymphatic leukemia, Minot and Isaacs found that the rate of incidence of males to females was about 3 to 1. Young females showed a greater incidence than older ones. They also found that lymphatic leukemia most commonly occurred between the ages of 45 and 54, while chronic myelogenous leukemia occurred about ten years earlier. Acute leukemia, however, seems to have a predilection for women at the menopause.

Opie, in his experimental study of leukemia, found that leukemia and leukemic lymphoma could not be transmitted from one species to another, but he said there was evidence that leukemia of animals could be transferred to other animals of the same species. Leukemia of fowls, which is considered due to a filtrable virus, is easily transmitted to other fowls.

An aleukemic stage may occur in either the acute or the chronic form of lymphatic leukemia. Crawford and Weiss found that low white cell counts are common enough in the acute and subacute forms of leukemia but are not well known in untreated chronic cases. They concluded that since their case had not had X-ray or radium treatment he had always been aleukemic or was during the entire hospital observation.

A case of acute lymphatic leukemia, which showed a rapid change from a slightly increased total leukocyte count to a very high one following a cold of one week, was reported by Werner. In his patient the leukocyte count ranged from 9,000 to 248,000, with 76 per cent lymphoblasts, in seventeen days.

Gwyn cites a case in which the leukocyte count was normal in the beginning, high during several weeks, then normal shortly before death. In acute leukemia the low cell count may be due to exhaustion, as in the seriously ill patient.

Probably the lowest blood count on record in a case of aleukemic leukemia was that reported by White and Davey. In their patient the total leukocyte count was 1,100 with 84.4 per cent small lymphocytes.

The only reference to the coexistence of aleukemic leukemia and tuberculosis that the writer has seen is that of Fergenbaum. Fergenbaum, however, made no mention as to whether the tuberculosis was of a glandular or pulmonary type. It was his belief that the tuberculous process was an expression of lowered resistance in the patient.

D. L. Farley gives the following description of the appearance of the lymph nodes in lymphatic leukemia:

"The histological picture of chronic lymphatic leukemia (and aleukemic leukemia) is best seen in the lymph node. The architecture of the node is, as a rule, completely destroyed. The orderly arrangement of the germinal centers, cords, sinuses and fibrous septa is replaced by an unorganized hyperplasia of lymphatic cells. The uniformity of the cell type is striking and there is usually little variation in the size and appearance or intensity of the staining."

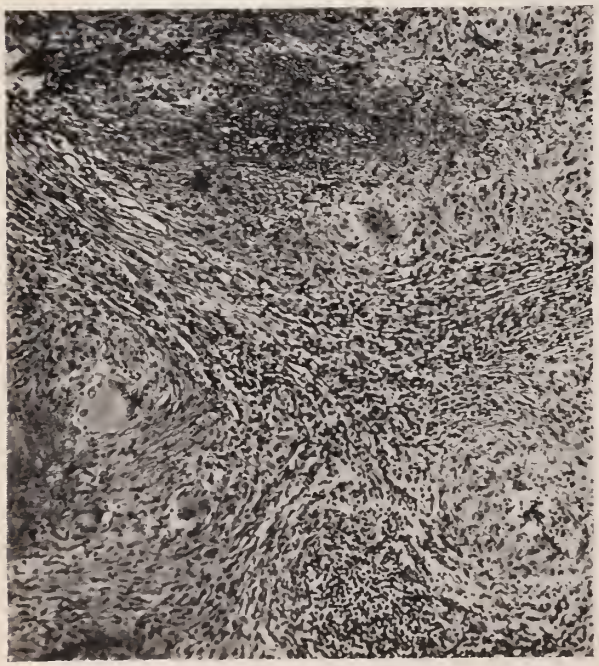
Pinkerton says: "Atypical conditions are frequently encountered that clinically and pathologically appear to be borderline cases showing various mixtures of the characteristics of acute infections, the purpuras, the anemias and the neoplasma of the blood. The term aleukemic leukemia is commonly applied to an ill-defined group of cases in which the blood picture during life shows severe anemia but does not justify the diagnosis of leukemia, while at autopsy, in addition to the leukemic-like cellularity of the bone marrow, accumulations of the myeloid or lymphoid cells are found in the viscera, these accumulations having a qualitative, but usually not a quantitative similarity to those true leukemias."

In some cases it is impossible to arrive at a correct diagnosis until the organs have been studied histologically at autopsy.

Report of Case

Female, age 75. When first seen by the writer in 1927, four years before death, she

complained of two lumps in the right side of her neck and loss of weight. These lumps were neither tender nor painful, and they had been noticed only two months. It was the patient's belief that there had been no increase in the size of these nodules since they were discovered. Examination April 1, 1927, revealed two enlarged lymphatic glands, the size of hazelnuts, in the right posterior cervical region just above the supraclavicular space. These glands were freely movable, discrete, not tender and unattached to the skin or underlying tissues. With the exception of a systolic blood pressure of 180 and diastolic of 95, moderate sclerosis of the arteries, chronic mastitis, right, and external hemorrhoids, the physical examination was negative. Urinalysis: albumin heavy trace, sugar negative. Microscopic examination showed hyaline casts, grade 2. Blood Wassermann negative. Blood picture, April 1, 1927: Hb. 75 per cent, R. B. C. 4,900,000, W. B. C. 6,000. A differential count showed small lymphocytes, 49 per cent; L. M. 2 per cent; neutrophiles, 49 per cent. On May 12, 1929, an examination showed no change in the size of the glands and the patient's condition appeared to be practically the same as it was two years previously. On June 9, 1930, she consulted the writer because of marked loss in weight and strength following an attack of "flu" a few weeks before. Her appetite had become very poor, the lumps in the right neck had enlarged considerably recently, and other similar nodules had appeared in the left neck. A blood count at this time showed Hb. 60 per cent, R. B. C. 3,560,000, W. B. C. 3,600, lymphocytes, 73 per cent, large mononuclears, 3 per cent and neutrophiles, 24 per cent.



Section of cervical lymphatic gland showing tuberculosis.

Three of these enlarged glands were removed from the right neck for diagnosis July 2, 1930. The sections showed tuberculous adenitis (see photomicrograph).

X-ray irradiation was then instituted, and it caused the remaining glands to decrease markedly in size. No irradiation of any kind had been given before the operation for removal of the glands was performed. Following removal of the glands for diagnosis there was a draining sinus at the site of operation for several months. At the end of six months, however, the wound was entirely healed.

In March, 1931, the patient reported that she was still weaker, had no appetite, and was still losing weight. Several new nodules had appeared in the neck and in the post-auricular region, some of which caused pain locally and along the course of the nerve which was being pressed upon. X-ray exposure caused these almost to disappear in forty-eight hours. In spite of treatment by irradiation and tonics, the patient showed very little improvement in her general condition. X-ray studies of the chest and gastro-intestinal tract at this time revealed no evidence of pathology. On account of the gradual downhill progress she was encouraged to consult members of a well-known clinic. Blood examinations there in May, 1931, showed 3,100 leucocytes, 85 per cent being lymphocytes and 15 per cent being neutrophiles. Only a few granulocytes were found, all of which were polynuclear cells. She was given repeated blood transfusions and tonics then but the disease rapidly progressed, terminating fatally in coma in June, 1931.

Conclusions

An aleukemic stage in lymphatic leukemia is not uncommon but its coexistence with tuberculous adenitis in a person seventy-five years of age seems worthy of attention. From the blood pictures and the clinical course it seems quite conclusive to the writer that the aleukemic leukemia was present in this patient during the four years of observation, although the rapid growth of the glandular masses a few months before death, with their sudden disappearance following irradiation, leads one

to believe that these were the first glandular manifestation of the leukemic condition.

The microscopic appearance of the gland shows every evidence of tuberculosis but the glandular masses which appeared suddenly when the marked prostration developed were undoubtedly not that of tuberculosis.

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THE CLINICAL LABORATORY AS AN AID IN THE DIAGNOSIS, TREATMENT AND PROGNOSIS OF DISEASE.*

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It is difficult to explain the unwillingness or apparent negligence of a great number of physicians to carry out carefully simple laboratory investigations. It is a fact that the laity, by its better instructions in medical matters, is becoming the best guardian and advocate of thorough clinical investigations. The statement that the blood has not been examined and the urine has not been tested is not an uncommon one to be made by the patient.

The main fact that impresses one, who with deliberation views the science of medicine as it stands today, is that it owes more to the man of pure science than to the so-called practical man. I do not wish to be considered for one moment as suggesting that the practical man is indispensable, for I realize that we cannot do without him; but his success is essentially dependent, in many respects, upon the man of science. He may perform many difficult operations successfully, but the laboratory worker has shown the cause of suppuration following operations and how it can best be prevented. One of the notable tendencies or rather inevitable results of the recent progress in internal medicine is the constantly increasing value assigned to laboratory methods as aids in diagnosis. They are so wantonly neglected, however, by a large number of physicians that the necessity for further emphasizing them and pointing out their practical applications in clinical medicine is quite apparent. Some one has said, and rightly too, that by experiment and science medicine is compelled to move forward and being firm in the belief that the laboratory will be the means by which medicine will continue to advance, I have chosen as the subject of this paper, "The Clinical Laboratory as an Aid in the Diagnosis, Treatment and Prognosis of Disease."

This question may be asked: What do you mean by the term "clinical laboratory?" A clinical laboratory is one in which chemical, physical and biological methods of diagnosis are practically applied to the study of disease. Its existence is largely dependent upon and closely associated with the laboratories of chemistry, physics, biology and pathology. Of itself, it may be a research laboratory in the pure science as well; but it is essentially a laboratory of applied science as it relates to medicine.

In the time of Hippocrates there were no clinical laboratories. In fact, our advancement in this branch of medical science dates back but a few years. But so familar have we become to the many new appliances now in use, that one almost forgets that there ever was a time when we did not possess them. A survey of the ancient medical writings will disclose the fact that the ancients not only examined the pulse and tongue of the patient, but the ejecta; consulted the stars; the flights of birds; noted any incidental occurrences during their visits, thus making diagnoses and prognoses from varying circumstances. Their methods of examination were very crude, depending upon the ordinary senses and unaided eye. With the invention of the microscope an entirely new field of medicine was opened up. By its aid Davaine, in 1863, discovered the bacillus of anthrax; Eberth, in 1880, discovered the bacillus of typhoid fever; in other

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words, the germ theory of disease was proven beyond question.

Later, with the discovery of the tubercle bacillus, another great step was made, as its presence in sputum proves positively the existence of tuberculosis, and it may be found before the physical signs are at all definite. An examination in this direction is now regarded as indicated in all cases in which there is the slightest suspicion as to the presence of tuberculosis. The physician who does not avail himself of this, the most important aid in the early recognition of tuberculosis, is guilty of a serious lapse in his obvious duty to his patient and to the public. We all know, or should know, that the absence of tubercle bacilli in a single specimen of suspected sputum does not exclude tuberculosis. Several examinations should always be made, at least ten on ten consecutive days, before a negative report is recorded. We should not lose sight of the fact that there are other types of bacteria to be found in sputum; therefore, we should examine the sputum for other organisms—the most important ones being the pneumococcus, streptococcus and the spiral forms. The typing of the pneumococcus in pneumonia, which is not an aid to the diagnosis of pneumonia, but to know the type of the pneumococcus, is of some value in arranging treatment from the standpoint of serum therapy. This, no doubt, is of more theoretical than practical value. Quite as important as the search for tubercle bacillus in suspected cases of tuberculosis is the search for the organism of diphtheria in doubtful cases and in the absence of a clear clinical picture. No physician can hope to have enough of clinical experience to always differentiate diphtheria from non-diphtheritic anginas without the aid of the laboratory, nor can he always make a diagnosis of Vincent's angina without resorting to the laboratory for assistance. Physicians with the most clinical experience are usually the ones who call most on the laboratory for aid.

Of incalculable value, both from the standpoint of diagnosis and prognosis, is the relation existing between inflammatory disease and leukocytosis. Generally speaking, the increase in the number of leukocytes is here proportionate to the intensity of the local infectious reaction. Here is a child who becomes suddenly ill with ill-defined symptoms. Temperature is high; pulse accelerated; respiration increased, but often only in direct proportion to the height of the fever; physical examination negative. The first day passes, second, third, fourth, fifth and even a greater length of time may elapse before a diagnosis can be made. Holt tells us that in 40 per cent of all cases of infantile pneumonia the physical signs of the disease are greatly delayed and may not appear until the day of the crisis. In just such cases the value of blood examinations is at once apparent, as the existence of a well-marked leukocytosis will probably give the diagnosis, and I might say the prognosis as well for it is noteworthy that the absence of a leukocytosis in severe pneumonia will probably admit a fatal prognosis. You will, no doubt, recall that there are six principal types of leukocytes in the blood stream, viz., polymorphonuclear, large and small lymphocytes, eosinophile; basophile and the myelocyte. We further know that the myelocyte has its origin in the bone marrow and first appears as a cell with a single nucleus, being called the meta-myelocyte, the mature cell being the polymorphonuclear leukocyte. In acute infections we find the greater the infection the more stimulation of the bone marrow, and hence the greater number of these meta-myelocytes. We can easily recognize, therefore, that we have a patient who is acutely infected, because the blood count shows a great increase of the meta-myelocytes, progenators of the polymorphonuclear leukocytes, indicating that the patient has a bone marrow which is profoundly disturbed by the presence of an acute infection. We think a better plan to judge the degree of infection is by the total leukocyte count and the presence of these meta-myelocytes that are in the blood stream rather than by the leukocyte count and the presence of the polymorphonuclear leukocyte. In appendicitis the leukocyte count in conjunction with the differential count is one of the most important aides in the diagnosis and differential diagnosis of appendicitis. The question, therefore, may be asked, "In what diseases, then, can a general blood examination be of value in diagnosis?"

I shall mention a few of the more common diseases, viz., pernicious anemia; sickle cell anemia; secondary anemia where there is a marked reduction of the erythrocytes and hemoglobin in such conditions as malnutrition and chronic poisoning; chlorosis; agranulo-

cytic angina; polycythemia; leukemia (myelogenous and lymphatic); purpura hemorrhagia, and possibly Banti's disease.

Within a remarkably short space of time, the chemical analysis of blood—primarily because of the perfection of the colorimetric methods of Folin, of Harvard,—has won for itself a permanent place in clinical studies and investigations. This study is of particular value in the practice of internal medicine. Blood chemistry studies should be made in all cases of pre-operative bladder and prostatic conditions; in cases of chronic nephritis (interstitial and parenchymatous). The diagnosis as well as the prognosis of pregnancy can better be followed by determining the blood chemistry at mid-term. The use of blood sugar determinations to control the insulin dosage in the treatment of diabetes and diabetic coma is well known and, likewise, the termination of plasma chlorides as a guide to the diagnosis and treatment of large numbers of hypertension cases. Blood sugar determinations are of particular value in differentiating diabetes mellitus from renal glycosuria. The large insurance companies of America today are very much interested in this type of examination because they realize that renal glycosuria is not recognized as being true diabetes and the urine examination alone cannot make the differential diagnosis.

With the more skillful use of the microscope and the development of our knowledge of biochemistry the examination of urine means more than the mere determining the presence of sugar and albumin. To a certain extent, generally too limited, examination of urine is done by every physician worthy of name. The tools with which this is done constitute the nucleus, or shall I say the nucleolus, of the clinical laboratory. Many are the errors which are prevalent, such as excluding sugar because of somewhat low specific gravity, ignoring the fact that important modifications of albumin fail to respond to the ordinary tests and excluding Bright's disease because of the absence of albumin at the time of a single examination. The so-called renal function tests are of special value and are used extensively in determining the functional capacity of the kidneys as to their ability to concentrate various ingested products, and this should be determined in all cases of pre-operative prostatectomies in elderly men; in cases of nephritis; uremia; eclampsia; mercurial poisoning, etc.

In diseases of the gastro-intestinal tract laboratory methods are essential to a correct diagnosis. I do not mean to say that every patient with gastric symptoms should have a gastric analysis made, because there are many neurotic individuals who are always complaining of various forms of gasses, and the difficulty of obtaining relief by the usual domestic remedies. I would insist, however, upon the examination of the gastric contents of a patient who is 50 years old or older, who gives a history of loss of weight, acute onset of dyspeptic symptoms in which the conditions persist longer than three weeks. The only chance that your patient has with carcinoma of the stomach depends upon an early diagnosis, long before a tumor mass can be felt or loss of flesh has gone to a marked degree. It is a safe rule that in the majority of cases in which a complete chemical analysis has been made and reveals the absence of free hydrochloric acid and lactic acid in appreciable amount, maligancy is present.

There is much being written today about cancer, its early diagnosis, treatment and the results obtained. The clinical laboratory has much to offer in this socalled field of tissue pathology. Every physician should use every means that he can in making an early diagnosis of cancer. I have recently learned of four old men sentenced to a horrible and inevitable death because some one did not take time to excise a bit of tissue to determine whether or not the "sore" was cancerous. The bit of tissue might have been examined in a clinical laboratory at a small cost, diagnosis made, and the neoplastic tissue removed before metastasis occurred. This was not done, and now those four old men are hopeless, objects of ghastly ugliness, with foul smelling necrotic tissue where lips and cheeks should be, abhorred by their relatives and deserted by friends. The examination of the gastric contents is not confined primarily to the diagnosis of carcinoma of the stomach but when properly conducted, and the findings, properly interpreted, lends distinct aid to the diagnosis of other gastric conditions, such as acute and chronic gastritis; pernicious anemia; duodenal and gastric ulcers.

There are many other conditions in which the clinical laboratory offers much assistance

in making a correct diagnosis. I shall take time to mention only a few of them; syphilis; urethritis (specific); typhoid and para-typhoid fever; meningitis (septic and tubercular); malaria; filiariasis; trichinosis; actinomycosis; malta fever; tuleremia; taeniasis; amoebiasis; ascariasis; sarcoma; lipoma; chrondroma and osteoma.

It is scarcely necessary to speak upon the importance of technique in relation to laboratory methods. The laboratory can be of no assistance whatsoever unless the methods are correctly conducted. Therefore, the laboratory diagnosis depends a great deal upon the training, skill, honesty, integrity and experience of the individuals concerned in this phase of medicine.

Of course, no one will be so absurd as to say or believe that the clinical laboratory, with all of its instruments of precision, can ever possibly replace the searching history and the general physical examination in the general diagnosis of disease, but none ought to be so indifferent to the interest of his patients as to allow any means for a correct diagnosis to go unused, especially one as valuable as the clinical laboratory. After all, the three most important things to consider in making any diagnosis is the evidence afforded by the clinical history, thorough physical examination, and the clinical laboratory.

Certainly the item of expense and that of the practicability must be considered always, but within reasonable limits, I believe the patient would much rather have two dollars or more added to his bill, even during this period of depression that we have been reading and hearing so much about within recent months, and the assurance that he has been examined and given the benefits of every advantage science can offer, than to have the smaller bill and receive only a desultory examination. No physician has a moral right to present any bill at all until his patient has been given the benefits of all these arms of medicine in arriving at a correct diagnosis.

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THE LOWER EXTREMITIES IN THE DIABETIC PATIENT.

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In the last two or three years there have been a diminishing number of diabetic patients presenting themselves for study for the first time who give the classical symptomatology of thirst, polyuria, excessive hunger, and loss of weight. In the pre-insulin days and early insulin period these symptoms were almost always the characteristic picture, while in recent years the diabetic patient presents himself complaining mainly of one or more of the complications of the disease. Of all the complications the one which seemed to be the most serious problem had complaints referable to the lower extremities.

It is generally conceded that when a diabetic patient requires a surgical operation, he faces a questionable future. Several years ago I reviewed[1] a small number of surgical conditions in our diabetic patients and noted that the mortality in the entire group was 18.7 per cent. In surgical conditions, excluding those involving the lower extremities, the mortality was 4.7 per cent a little higher than general surgical mortality, but in those diabetic cases where surgery was instituted for lower extremity complication alone, the mortality was 25.5 per cent.

Because of this apparent increase in the diabetic patient with complications involving the feet and lower extremities and the attending results, I reviewed 500 diabetic cases to determine—(1) the character of extremity complaints with an attempt at classification; (2) the percentage of amputations, (3) the percentage of associated arterial disease. These cases were reviewed without reference to age, sex, duration of disease or any other factors, being from an alphabetical index of our diabetic patients, from office, hospital, and consultation practice.

Statistical Findings

In the group there were seventy-nine, or

15.8 per cent, who had some visible lesion on the lower extremities, such as ulcers, gangrene, or infection. Sixty-three, or 12.6 per cent, presented clinically one or more vasomotor symptoms in the feet and legs, such as burning sensation, cramps, pain, tingling, numbness, or weakness (see Table I). One hundred and forty-two patients, or 28.4 per cent of the total number reviewed, showed evidence of lower extremity involvement.

TABLE I

	No.	*Per cent*
Ulcers	30	6 %
Gangrene	31	6.2%
Infection	18	3.6%
Vasco-motor symptoms (as pain, burning, cramps, tingling, numbness, weakness)	63	12.6%

In this series of 500 diabetic cases, one hundred, or 20 per cent, had clinical findings of arterial disease evidenced by direct examination of the vascular system, such as eye-ground studies, roentgen study of the blood vessels of the lower extremities, and palpation of superficial vessels, such as the radial and brachial arteries, and by such presumptive manifestations elicited by means of the determination of blood pressure, and urine, and kidney function tests. Of the one hundred and forty-two patients presenting lower extremity complaints, eighty-three, or 59.1 per cent, had clinical findings of vascular disease (see Table II). Now, of the one hundred diabetics in this series who had clinical evidence of arterial disease, 83 per cent had complaints referable to the lower extremities.

TABLE II

	No.	*Per cent of Total*
Ulcer	16	53.3%
Gangrene	23	74.1%
Infection	15	83.3%
Vasco-motor	29	46. %

It is an extremely significant factor to note from Table II that 74.1 per cent and 83.3 per cent, respectively, of those diabetics who had gangrene and infection of the lower extremities had arterial disease.

Mutilating operations, such as amputation, were done in twenty-six of the thirty cases of gangrene. Of the total number of cases studied, 5.1 per cent lost a portion of a limb.

DISCUSSION

Many factors, such as the degree of diabetes, age of the patient, the duration of the disease from its discovery, the sex, were purposely omitted from this review. Of the last six patients we have sent to the hospital for study and management, two had gangrene of the feet, one had a large black ulcer on the heel of one foot and a smaller ulcer on the other foot, one had an infected foot, one was in coma, and one had marked hypertension. Of the four cases with lower extremity complications, two necessitated amputation, one incision and drainage, and one local treatment. All four cases showed evidence of sclerotic disease of the blood vessels by roentgen ray study.

The outstanding feature of our present day diabetic seems to be a problem of vascular disease, particularly manifesting itself in some complication of the lower extremities. There may be several reasons for this apparent increase in vascular disease in the diabetic:

First, the general education of the known diabetic has now been so well completed that his care rests solely in his own hands, and therefore does not consult the physician as often as he should except in the extreme need. Another reason given is that the diabetics are now probably living longer and going into the usual age, when normally a certain amount of vascular change takes place. It has been pointed out, however, that the sclerotic changes are occurring at an earlier age than one would expect them. Albutt[2] has noted many instances of sclerotic changes in young persons, including children. In our small group no such findings were noted. Joslin[3] is firmly convinced that arteriosclerosis is secondary to the diabetes and that the duration of disease is important. He believes that the cholesterolaemia usually found in the diabetic is the factor bringing about the change in the blood vessels through a primary deposition of fat in the arterial wall, with subsequent artheromatous plaque formation. No specific accepted cause for the prevalence of sclerotic changes in the diabetic is known, but one must admit the unusual frequency of their association. Bowen,[4-5] after a roentgen ray study of the development of arteriosclerosis in diabetics over a period of several years, concluded that the development of severe vascular pathology requires several years of neglect of the diabetic condition.

From the above analysis it is evident that one of the main problems confronting the diabetic patient of today is the prevention of sclerotic vascular change in the lower extremities, as well as its management—once it has

developed,—together with the treatment of developed pathology played by the feet.

Prevention and Treatment of Lower Extremity Complication

Based upon the theory that arteriosclerosis is caused by the high fat content of the blood, especially cholesterol, low fat diets would be indicated. Many workers in the diabetic field are now using such, feeding high carbohydrate diets to the limit of tolerance with low fat content. Their use in prevention of the formation of sclerosis of the vessels has not been established long enough to report any decision. The question is sufficiently urgent to continue the application of the low fat diets until definite proof of their efficacy can be established.

All will agree, I am sure, neglect of the diabetic condition itself would hasten the production of arteriosclerosis or bring about such changes as to predispose to lower extremity pathology.

Trauma is undoubtedly the predisposing factor in the production of the visible lesions of the feet. The wearing of improperly fitted shoes, such as those which are too tight, narrow and short, must be avoided. Proper care in the management of the nails, corns, and calluses is to be exercised. In trimming the nails, always cut straight across the top and never into the corners. Avoid the cutting of corns and calluses. Our usual instructions to the diabetic in the presence of corns are to wear pads with a hole cut in the center so that there will be no direct pressure on such callus places, then soak the feet in warm water, and, by the means of a fine toilet pumice, file the hard crusts off gradually a little each night. The history too frequently elicited from the patients who present lesions on the feet is that such pathology was preceded by the cutting of corns or calluses with a razor blade, the point bleeding, and a short while thereafter becoming sore and infected.

A preventive measure, which seems trivial and yet which is so very important, is the general hygiene of the feet. Daily washing of the feet is essential, using soap and water and carefully drying afterwards with especial care to the area between the toes. To many patients, such a direction may appear ludicrous, but when one sees the ill results of uncleanliness about the feet, such admonishment is not in vain. Lanolin is used very frequently to keep the skin soft and free from dryness and scales.

Delay in having proper treatment for apparently slight and insignificant cuts, bruises, or other injuries frequently are paid for dearly by loss of limb or life. The diabetic patient must be instructed to consult his physician early in such instances. Immediate first aid attention to such abrasions should be given.

Certain measures are used as aids to circulation of the feet and legs which we have found to be of considerable benefit. Instituted prior to the onset of lower extremity symptomatology, they might prevent a certain number of conditions from occurring. In that group of diabetics who have symptoms, such as those noted as vasomotor, these measures are of considerable benefit in affording relief. Foot exercises, such as describing a circle a number of times in both directions several times a day, or raising the body on the toes are advised. Massage, foot baths of alternate warm and cold water, and Buerger's positional leg manoeuvers are instituted. Advice is given the patient in regard to the wearing of circular garters and the crossing of the leg, since these procedures might possibly inhibit circulation.

Summary

The problem of lower extremity conditions in the diabetic patient is a serious one. A brief review and discussion of the occurrence of this condition occurring in five hundred diabetics is submitted.

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TRIBROMETHYL ALCOHOL (AVERTIN) ANESTHESIA IN OBSTETRICS.*

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Avertin (tribromethyl alcohol) was first prepared by Willstatter and Duisberg,[1] in 1923, by the action of yeast on bromal. It is a white crystalline substance with a melting point of 79° to 80° C. and is soluble in water at 40° C. up to 3.5 per cent. It is marketed in the form of avertin fluid, which is a solution of avertin in amylene hydrate, 1 c.c. of the solution containing 1 gm. of avertin.

During the past few years this anesthetic has been widely used, chiefly as a basal anesthetic, and several clinical and experimental studies concerning it have appeared.

The drug is administered by rectum in the form of a 2.5 per cent solution, in distilled water, which has been heated to 40° C. It is important that this temperature is not exceeded as otherwise dibromacetaldehyde is formed, which has a marked irritating effect upon the rectal mucosa. For this reason the solution should be tested before the injection. A simple method of doing this is to add one or two drops of a 1 to 1,000 aqueous solution of Congo-red to about 5 c.c. of the prepared solution. If an orange red color developes it is safe for use. If the color becomes blue or violet the solution should be discarded, as it has been decomposed.

In the body avertin is detoxicated by its combination with glycuronic acid in the liver and is eliminated in that form by the kidneys (Endoh[2]). Straub[3] recovered 68 per cent in this combination from the urine during the first twenty-four hours and 13 per cent in the second twenty-four hours.

Avertin has very little effect upon the liver function as determined by the bromsulphalein test (Bruger *et al.*[4]), comparing favorably in this respect with amytal and ether. Histologic study of the liver and kidney tissue of dogs which had been anesthetized with 500 mg. of avertin per kilogram of body weight showed no evidence of necrosis being produced by it (Stander[5]).

Lendle[6] has found that the toxic dose by rectum for the various laboratory animals is 0.5 to 0.6 gm. per kilogram of body weight, and the anesthetic dose for these animals is 0.25 to 0.30 gm. per kilogram of body weight. This gives a therapeutic index of about 1.7. He also compared the relative toxicity of the drug with chloroform, ether and Gwathmey's ether-oil-morphine-magnesium sulphate anesthesia, and found that avertin was less toxic than any of these.

Its use in obstetrics has been limited. In an attempt to determine its value as an obstetrical anesthetic it was used in 100 cases of labor at the Jersey City Medical Center and the Margaret Hague Maternity Hospital. For comparison, 100 control cases were used, fifty of which were given morphine sulphate and hyoscine in moderate doses, and fifty were given no analgesia.

In this series a dose of 60 mg. per kilogram of body-weight was used. When necessary, this dose was repeated at three or four hour intervals, for three or four doses. Sixty-six patients were given one dose, twenty-eight were given two doses, four were given three doses, and two were given four doses. Labor was well established, with strong uterine contractions at three to five minute intervals, before the initial injection was given.

There were fifty-one primigravidae and forty-nine multigravidae. Ninety patients were in the first stage of labor, sixty-six early (with the cervix three fingers dilated or less), and twenty-four late (with the cervix dilated more than three fingers). Ten were in the early second stage.

The technic of administration was as follows: The patient was instructed to lie on her left side and the avertin solution was slowly injected into the rectum through a rectal tube, by gravity, during the interval between pains. The tube was passed beyond that portion of the bowel which was narrowed by the presenting part. Upon withdrawing the tube a towel was held firmly against the anus about five minutes, and the patient was instructed to breathe through her mouth, and not to bear down for one or two pains.

Effect on the Mother.—The patients became drowsy in four or five minutes and were usually sleeping in ten minutes. This rapid induction of unconsciousness was not attended by any excitation or unpleasantness. Respirations were slowed, but only slightly, and tended to be deeper. Uterine contractions usually con-

*From the Margaret Hague Maternity Hospital, Jersey City, N. J.

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tinued unchanged, but occasionally they were temporarily diminished. In four cases the pains ceased for fifteen or twenty minutes, then returned, gradually attaining their former intensity. The patients were aroused momentarily during contractions and often became restless. Eight patients showed marked restlessness, continually rolling and tossing about in bed and often crying out during pains. A second injection relieved this temporarily.

There occurred an initial fall of blood pressure of 10 to 15 mm., which gradually returned to normal in thirty minutes to an hour. The pulse rate was increased ten to fifteen a minute, but returned to normal as the anesthetic wore off. Otherwise the pulse was unchanged.

The maximum effect of the drug lasted about one hour and forty-five minutes. However, after this there was usually some drowsiness and relief of pain for another hour.

There was not noticed any prolongation of labor. The total duration averaged nineteen hours and thirty-three minutes for the primigravidae and ten hours and fourteen minutes for the multigravidae. The average duration of labor after the initial injection was five hours and twenty minutes for the primigravidae and two hours and thirty-six minutes for the multigravidae.

There was a spontaneous delivery in seventy-two cases, low forceps in twenty-two, midforceps in five, and Caesarean section in one. Table I exhibits the duration of labor and the operative incidence in this group as compared to the control group.

was responsible for a slight increase in the low forceps deliveries. All of the operative deliveries required supplementary anesthesia. This consisted of ether in three cases and novocaine intraspinally in twenty-three cases. Small whiffs of ether were given for the delivery of the head in twenty-two of the spontaneous deliveries.

No difference was noticed in the tonicity of the uterus after delivery, and there was no increase in uterine bleeding, except that in one case there was moderate postpartum hemorrhage due to poor tonicity.

The patients usually slept for a short while after delivery and awoke feeling well. The majority had only vague or no recollection of events after the injection. No patient in this series complained of rectal or colonic irritation, and no passage of mucus or blood was noted, nor were there any sequelae during the puerperium attributed to avertin.

An effort was made to determine whether or not this form of anesthesia produced kidney irritation. Catheterized specimens of urine were taken at delivery and on the third and seventh postpartum days. A comparison of the findings in the two series showed such similarity that no conclusions could be drawn.

Included in the avertin group were eight cases of pre-eclampsia, showing distinct renal disturbance. The progress of these patients was entirely satisfactory, without demonstrable irritation of the damaged kidneys. However, this group is too small to draw any conclusions as to the safety of avertin in the presence of kidney change.

TABLE I

Duration of Labor and Operative Incidence in the Avertin and Control Groups

	Avertin		Morphine & Hyoscine		No Analgesia	
	Primi.	Multi.	Primi.	Multi.	Primi.	Multi.
Number of cases	51	49	40	10	25	25
Duration of Labor	19h.33m.	10h.14m.	21h.56m.	13h.54m.	20h.36m.	13h.
Operative Deliveries:						
1. Low Forceps:						
a. elective	9(17.6%)	0	6(15%)	0	2(8%)	1(4%)
b. outlet arrest	12(23.5%)	1(2.04%)	8(20%)	0	6(24%)	0
2. Median Forceps	4(7.8%)	1(2.04%)	3(7.5%)	0	1(4%)	0
3. Cesarean Section	1(1.9%)	0	0	0	2(8%)	0

Restlessness and lack of cooperation on the part of the patient often interfered with the smoothness of the delivery. This necessitated supplementary anesthesia in many cases, which

Effects on the Baby.—There was no change in quality of the foetal heart and only the normal variations in rate were noted during labor. Four babies were slow in breathing,

but responded readily to the usual methods of stimulation. Eight babies were cyanosed momentarily, but breathed instantly, and had good muscle tone. Their subsequent nursery course was normal. The condition of these babies compared favorably with that of the babies where the mothers were given no analgesia. Where the mothers were given morphine sulphate and hyoscine, seven babies were slow in breathing. They responded to treatment but not as readily as the babies of the two other groups.

Results.—The results in thirty-three cases were excellent. There was marked relief of pain and the patients had complete amnesia for the events of labor and delivery.

In thirty-seven cases the results were good. The patients experienced marked relief of pain, but remembered a few isolated facts about the labor or delivery.

In eighteen cases the results were fair, there being only slight amnesia and moderate relief of pain.

In twelve cases the results were poor. The patients experienced only slight pain relief and there was no amnesia.

Conclusions

1. Avertin is a satisfactory anesthesia for use during labor when used in a dose of 60 mg. per kilogram of body-weight. It is apparently safe to repeat this dose three or four times at three or four hour intervals.

2. Restlessness is the only undesirable effect produced. This occurs to a varying extent during uterine contraction in the majority of the cases.

3. The fact that it does not have a tendency to prolong labor is a distinct advantage.

4. Supplementary anesthesia is necessary during the termination of the second stage in about one-half of the cases.

5. Complete, or almost complete, amnesia and marked relief of pain can be obtained in the majority of the cases.

6. Avertin apparently has no untoward effect on the baby.

7. Apparently there is no untoward effect on the puerperium from the use of avertin.

8. Avertin, as judged by a very small number of cases only, in the dosage advised, has no appreciable damaging effect on the kidneys, even though these organs are the seat of some pathology before its employment.

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TRANSURETHRAL PARTIAL PROSTATECTOMY.*

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The development of electrosurgery and its application, during the past five years, to transurethral prostatic resection has marked an epoch-making advance in American urology. It is estimated that 60 per cent of all men beyond fifty years of age suffer from some degree of prostatic obstruction. From 15 per cent to 35 per cent of these require some type of treatment such as massage, diathermy, the daily use of the catheter, or surgery. Furthermore, among those coming for relief of prostatic obstruction, from 15 per cent to 20 per cent are found to have prostatic cancer. Again, about 6 per cent of glands resected surgically as benign hypertrophic types are found upon histologic study to contain areas of malignancy.

Removal of the prostate by incisional surgery is, in its elemental features, known to every physician. Through years beset with many tragedies of hemmorrhage, renal decompensation, and sepsis, the mortality in better trained hands has been reduced constantly. Yet the old man who submits to any type of incisional prostatectomy, regardless of his fitness for operation, must undergo an ordeal which

*Based upon papers presented before the Roanoke Academy of Medicine, January 4, 1932, and the meeting of the Southwestern Virginia Medical Society at Bristol, March, 1932.

from his point of view is inconsistent with the pain, annoyance, economic loss, and general discomfort, which one to three months of hospitalization entails.

In passing we may briefly mention some of the pioneer efforts made to remove prostatic obstruction by the urethral route. For the most part these proved unsatisfactory and have become matters of urologic history. Guthrie in 1834 described a prostatic catheter which enclosed a blade. This blade could be projected from within the instrument and thus cut a median bar as the instrument was passed into the bladder. Mercier from 1844 to 1848 brought out a series of cutting instruments for incising bars. In 1874 Bottini endeavored to obviate the hemorrhage produced by Mercier's instruments by the use of a cautery blade which he used, instead of the knife, to make incisions. Then Chetwood devised the operation of exposing the bladder neck perineally and excising the obstructing bar with the galvanocautery.

Young in 1909 introduced the first practical punch instrument and successfully applied the device to the resection of median bars in a large number of cases. Hemorrhage was the chief cause of difficulty following Young's operation and this investigator attempted to correct the difficulty by applying a cautery to his punch in 1911. In 1920 Caulk introduced his cautery punch and in addition to the removal of median bars began to attack adenomatous hypertrophies of the lateral lobes. From year to year Caulk extended the scope of the operation and gradually brought the procedure to the dignity of a transurethral resection.

The introduction of the McCarthy panendoscope telescopic system and the advent of the electrical knife capable of cutting under water brought a new impetus to endoscopic prostatectomy. Collins adapted an electrical knife resector to the McCarthy endoscope. Kirwin first developed a rotary punch which resected tissue previously coagulaated by the introduction of a transfixing needle electrode. More recently he has devised a resector which utilizes the electric cutting current. Foley in 1928 presented an electrical cutting loop instrument for transurethral prostatectomy but this was never brought to a wide field of clinical application.

Stern in 1926 presented his resectoscope which consisted of a fenestrated lens urethrascope through which an electric cutting loop could be passed, thus excising under vision the tissue in its grasp. Davis further developed the instrument, improving the stability of the loops and applying both cutting and coagulating currents to the instrument. Furthermore, Davis has definitely demonstrated the applicability of the Stern-Davis resectoscope, having reported over 350 cases with no mortality attributable to the operation, and with immediate excellent results. In 1931 McCarthy presented a somewhat similar resector of the electrical loop knife type. Working with F. Wappler, McCarthy developed also a surgical electrical unit with which cutting and electrocoagulation may be carried out with the same current.

These electric cutting loop resectoscopes have enjoyed a merited popularity in their ever increasing application by urologists throughout the country during the past year. At least one of the instruments of this type should constitute a part of the armamentarium of the urologist who undertakes partial prostatectomy by the urethral route.

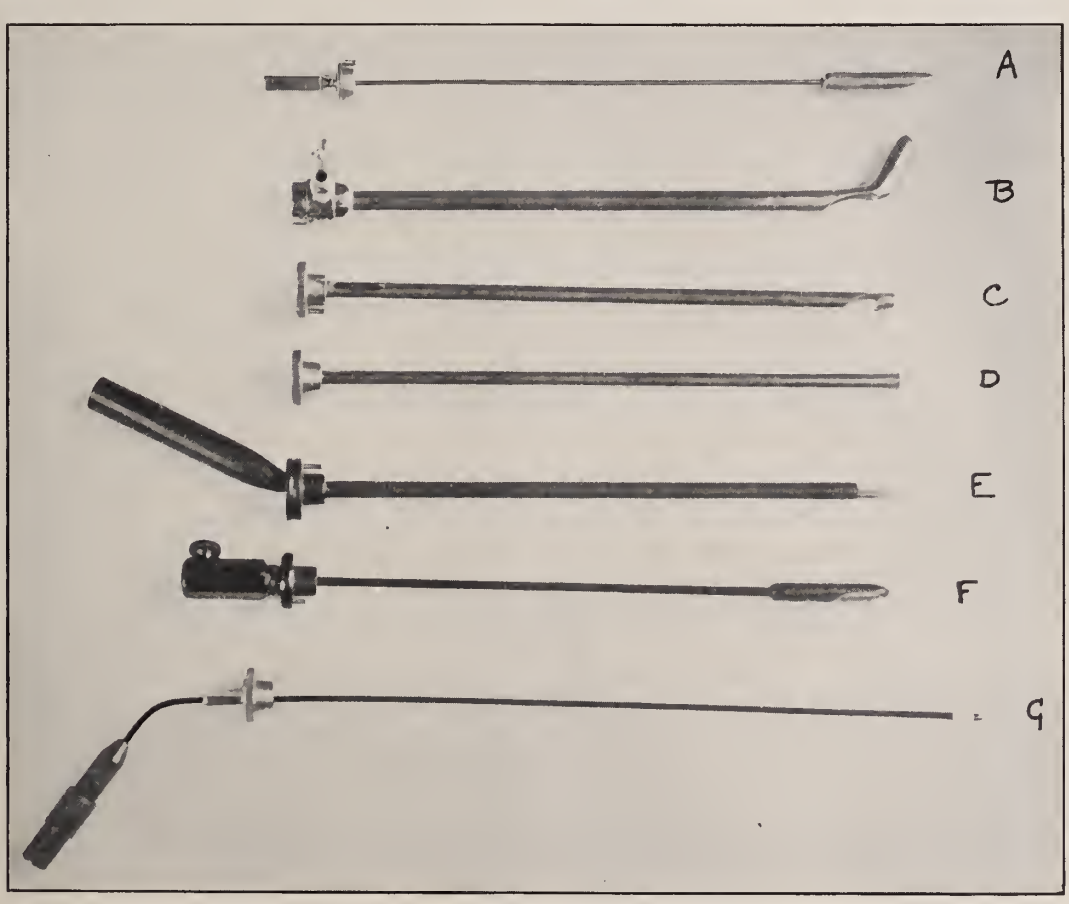
I wish to describe, however, a technique of transurethral partial prostatectomy which has been in use in some form at the Mayo Clinic since 1918 and which has during the past few years been brought to a high degree of combined efficiency and simplicity. Braasch in 1918 devised a median bar excisor which for the first time allowed the portion of the prostate to be removed to be visualized. Thus accidents such as cutting into the bladder wall, the trigone, or too deeply into the urethral floor could be avoided. Bumpus gradually extended the use of the instrument to the resection of adenomatous lateral lobe hypertrophies. At first he depended upon electro-coagulation of the prostatic bed with a Bugbee electrode for the control of hemostasis. With Tyvand, Bumpus has recently devised a multiple needle electrode which is plunged into the tissue to be cut. After momentary application of the electro-coagulating current, this electrode is removed and the ischemic tissue is cut through with a tubular knife.

The instrument which I use is shown in detail in the illustration. It has been slightly modified from the Braasch-Bumpus resector. The sheath and obturator are introduced into the bladder. Using the sheath as a Braasch cystoscope, the obstructing portion of the pros-

tate is visualized and the amount of tissue to be removed is estimated. One usually begins with the median lobe. The slot bearing tube is introduced into the sheath and the lobe definitely engaged in the slot, holding the instrument fixed with a moderate degree of force. The multiple needle electrode is then introduced and plunged into the tissue in the grasp of the slot. With a foot switch the electrocoagulating current is turned on for a few seconds.

The time of application of the current necessary to produce ischemia without excessive coagulation can be determined preoperatively in a few minutes by applying the electrode to a piece of raw beef under water. Upon removing the electrode the tubular knife (D) is quickly inserted and firmly plunged through the tissue. The slot-bearing tube and knife are then withdrawn bringing out the resected tissue. The window of the cystocope is replaced and the next area to be resected is brought into view. Any number of bites of tissue can thus be removed. When the operative removal of tissue has progressed to such a point that the operator can look through with unobstructed vision from the verumontanum to the trigone, the prostatic resection may be considered as completed. Residual bleeding is slight and no alarm need be felt if the terminal washing from the bladder is blood tinged. The prostatic bed should be finally reviewed, however, and any bleeding points coagulated either with the flat electrode (F) or the stiff Turner electrode applied under direct vision through a cut-off catheter guide (G).

The practicability of this technique has been proved by its application to a number of cases. Bumpus reports 250 cases operated upon from January, 1925, to January, 1932. Only nine of these subsequently required surgical prostatectomy. The multiple needle electrode which is a recent addition to the technique will probably enhance the application of the instrument to a wider field. While there are



Modified Braasch-Bumpus Prostatic Resector. A. Obturator. B. Sheath. C. Slot-bearing Tube. D. Tubular Knife. E. Multiple Needle Electrode F. Flat Electrode. G. Cut-off Catheter Guide with Stiff Electrode.

certain large vascular glands in which the electrical cutting loop instruments may be more applicable (and as emphasized above, one of these instruments should be at hand to attack more inaccessible areas of large intravesical and intraurethral lobes) this simple resector will prove preferable in the majority of instances, especially if the operator is familiar with the Braasch system of cystoscopy.

The advantages of the Braasch-Bumpus resector are numerous. First, no instrument gives a better picture of the obstructing portion of the prostate than does the Braasch cystoscope when drawn out into the prostatic urethra. Second, larger bites of tissue can be removed at each manipulation than with the electric loop instruments. With the Braasch-Bumpus instrument the average resection can be completed in fifteen to thirty minutes. Third, the instrument is less fragile than most resectors and less likely to complicating failures in the electrical system. There are no loops to burn out. Fourth, the high damped bipolar current from any standard diathermy machine may be used. The objection that the needle electrode must be applied without vision is not valid. The tissue to be cut is held under vision forcibly engaged in the slot of the instrument except for the few moments when the needle electrode is applied.

I have used the above technique in a number of cases with satisfaction. Seven patients were afflicted with a sclerotic collar type of contracted vesical neck, associated with long standing prostatis. Vesical tenesmus, urinary frequency, and dribbling were cardinal features. Their residual urine ran from zero to two ounces. The relief afforded these patients from the transurethral operation has been estimated as good to excellent. In carcinoma of the prostate I have twice removed enough obstructing tissue to afford good bladder drainage. Patients with lateral lobe hypertrophy frequently have been relieved of obstruction at one sitting. Several of these have been free from residual over a period of three years. One, with an especially large lateral lobe hypertrophy, still carries on his work as a minister, voids freely and has no residual. Another patient, 77 years of age, had a six to nine ounce residual, cardiac decompensation, and a large median and lateral lobe hypertrophy. After several weeks with the indwelling catheter, the median lobe and the inferior portions of both lateral lobes were resected and for two years there has been no return of his obstruction.

It is the general opinion from case reports that the immediate relief of patients treated by transurethral partial prostatectomy is excellent. Hospitalization after operation requires only a few days to a week, in the average instance. Occasionally there may be a prolonged febrile reaction from absorption from the electro-coagulated prostatic bed. This is more likely to occur in cases of long standing prostatitis than in cases of simple adenomatous hypertrophy without infection. Recurrences of obstruction so far have been infrequent and, as Bumpus and Davis both point out, are comparable to recurrences of obstruction after classical incisional prostatectomy. However, there are some urologists, like Lowsley, who sound a note of warning that transurethral techniques do not remove a sufficient portion of the adenomatous gland and that sooner or later recurrence is certain to occur in too frequent a number. Those advocating transurethral resections state that follow up statistics so far do not bear out this contention. Furthermore, they hold that recurrence is only an indication for a repetition of the endoscopic procedure. Time alone will evaluate the rationale of these counter-arguments. Certainly there is evidence enough to date that the patient suffering from prostatic hypertrophy will choose the transurethral operation, whenever it is applicable. Thus we may predict that the classical operation of suprapubic or perineal prostatectomy will be in the future an exceedingly infrequent procedure.

A few points are to be emphasized. Transurethral partial prostatic resection demands that the patient be prepared for operation in the same manner and with as much conscientious effort as for the incisional surgical procedure. The blood urea should not be over 45 mg. per 100 c.c., the phthalein excretion in two hours should be 40 per cent or better, the patient should be concentrating his urine, and his cardiac and general physical condition should be at the best level we can obtain. Forcing of fluids, the indwelling catheter, gradual decompression of the bladder and at times suprapubic cystostomy may be required. Bumpus advocates a course of massage and local treatment before operation in patients with prostatitis. Postoperatively the same principles that have reduced the mortality in incisional surgery must be strictly observed. Care

of the urethra and of potential hemorrhage or infection must be observed. Bumpus advocates the placing of a large calibered (26F to 30F) catheter in the urethra, and allowing it to remain forty-eight to seventy-two hours. Every effort should be made to keep the bladder from becoming over-distended as this will provoke bleeding. After the removal of the catheter the local treatment of the urethra varies with different urologists. Some apply no local treatment. Bumpus advocates daily irrigation of the bladder to wash out any sloughs as they may come away. If infection is excessive, continuous irrigation through a two way catheter may be applied. Delayed secondary bleeding is an occasional complication which is seldom alarming and may be controlled by the introduction of a large catheter or by fulguration of the bleeding point through an endoscope.

Finally, I believe the urologist who performs transurethral prostatic resection should be a trained cystoscopist, as well as a urologic surgeon. The matter of which instrument is preferred will vary with individuals according to the system of cystoscopy with which they are more familiar. My own feeling is that several types of resector should be at hand so that the method best suited to the individual case and the instrument which the operator thinks he can best apply may be utilized. Whatever technique be chosen, so long as it is satisfactorily carried out, transurethral partial prostatectomy for the relief of obstruction at the vesical neck promises to continue to be a boon to the elderly man who is afflicted with this disease.

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Correspondence

A Defense of the General Practitioner.

To the Editor:

A few weeks ago there appeared on the front page of one of the daily newspapers of this State an article giving extracts from an address by a well-known physician of New York, in which there was said that a large part of the increase in the cost of medical care comes from the failure of the general practitioner to treat more of the types of cases which come in his work and the tendency of the general practitioner to refer cases to hospitals and specialists when it is not necessary. In this article he leads the public to believe that a large part of the general practitioners are either incompetent or indolent. No doubt there are cases which are referred to hospitals and specialists when it is not necessary. Again, it is very necessary to refer certain cases to hospitals and to those who are specially qualified and equipped to treat them. The main point, however, is that the high cost of medical care comes mainly from the patient running to numerous general practitioners, hospitals, and specialists on his own account, without, and, in most cases against, the advice of the physician primarily in charge.

There has grown up in the minds of the public an idea that in most any illness with moderate duration or seriousness, the patient should be rushed off to somebody away from home. They believe that a strange physician or a distant hospital has some special power of magic or some special knowledge not possessed by others.

Only a few days ago a prominent official of Virginia had a statement on the front pages of the Richmond newspapers in which he said that the inmates of the various jails of the State were improperly taken care of. This article left the impression that the physicians were to blame. The article carried the suggestion that there be a supervisor over the physicians to establish a standard of professional care for the prisoners in the jails. I am sure the officials at the head of this movement did not intend any such reflection on the physicians of Virginia. There is no objection to the appointment of this Supervisor. I am sure the appointee will give his best service and, by bringing about a better co-operation

between the various local officials and employees, this service will be helpful. The objection is the news article which, by inference, puts most of the mounting costs of our jails and the lack of modern approved sanitary conditions upon the physicians. It places the general practitioner in a false light before the public. It even infers that the physicians available for looking after the prisoners in our jails cannot render a satisfactory service except under the eye of a supervisor.

These are but few of the evidences of the fact that the general practitioners of Virginia need someone to take up their cause through the press or some medium of publication. We wonder sometimes if the Journal of the Medical Society of Virginia could not place these facts before the physicians as they should be and from this Journal they could find their way into the daily press for the enlightenment of the public. We wonder if the President of the Medical Society of Virginia would not in the future place one member on the editorial staff who had the viewpoint of the general practitioner. The members of the Medical Society of Virginia are composed of, I daresay, eighty or ninety per cent general practitioners. They pay for most of the upkeep of the Society. Very few of the general practitioners are honorary members and do not have to pay dues.

To become a general practitioner a man has to take the same training and present the same qualifications as to practice any other branch of the profession. They are the main financial support of professional activities. The present tendency of the press and the public is to depreciate and discredit their work.

This condition of affairs is not brought about by men who are limiting their work to special subjects. These are men of the highest type. It is brought about mainly by people outside of the profession. A move for its correction should be brought about by the general practitioners themselves.

I believe at the next meeting of the State Society in Richmond there should be effected an organization of the general practitioners of Virginia. This organization should meet at the time of the meeting of the State Society. Such an organization should insist upon the highest standard of work by the general practioner and see that this work is placed in the proper light before the public and the profession.

E. L. Kendig, M. D.

Victoria, Virginia.
August 18, 1932.

Woman's Auxiliary, to the Medical Society of Va.

President—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
President-Elect—*Mrs. W. P. McDowell*, Larchmont, Norfolk.
Secretary—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
Treasurer—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

A Call to Service.

The tang in the morning air, the blue haze over the horizon, and the goldenrod and purple asters that bedeck the hillsides, tell us that the Autumn is fast approaching and that we must arouse ourselves from the Summer's lethargy and prepare for the Winter's work. The season will begin with the Convention held in Richmond November 1st to 3rd, at which time the new State Officers will be elected, and the new program for the Auxiliary for 1932-33 will be presented.

To do effective work, Virginia must be better organized, so we are working and praying for a large attendance. We believe if the doctors' wives could be made to realize the real help the Auxiliary could be to the profession, they would give it their hearty cooperation. Cicero said, "In nothing do men more nearly approach the Gods than in giving health to men." Virginia's department of Public Health, so ably begun by the late Dr. Ennion Williams, and so wisely carried on to greater usefulness by Dr. Draper, is recognized as one of the most efficient in the United States, and it is an honor and a privilege for our women to be asked to aid in "furthering the aims of the Medical Profession," in raising the standard of health in the State.

Many doctors' wives make the "hard times" an excuse for not doing their part.

We see, hear and read so much about the "*depression*," and the woes that beset us, that we lose sight of our many blessings. The year 1931 brought bountiful crops, the past winter was the mildest in generations, and as some-

one said, "We have a surplus of *everything* but *grace, grit, and gumption.*" What has become of our heritage of courage and fortitude handed down by our hardy pioneer ancestors, who conquered and settled this strange new world, "undaunted by savage people and terrifying unknown dangers"? Where is that determination to overcome obstacles, and *will* to *win* so characteristic of every true American? Have our moral and physical natures weakened and deteriorated through these years of ease and luxury? History proves in every crisis of this nation, whether wars, epidemics or economic problems, the women have risen to the occasion, and with "chins up," have striven to maintain the morale of the men, and to keep the home, church and school functioning. I believe that spirit still lives in their daughters, so I call upon the women of Virginia to aid in this "Crusade of Better Health." We wish our citizens to be 100 per cent efficient, not "just up and around." To have this we must carry on our program of education of the prospective mothers, and the examination of the pre-school children. This is a work in which every one in every Auxiliary can help.

We are very fortunate in having Mrs. Walter Jackson Freeman, the President of the Auxiliary of the A. M. A., to be our guest at the Convention, and I am sure her presence and enthusiasm will stimulate us to greater activity. So I urge all of the doctors' wives to come to Richmond and make this Convention the "biggest and best" in the history of our Auxiliary.

We will welcome any suggestions for the program or recommendations for the work. Please send at once to the president, as the program will be printed in full in the October VIRGINIA MEDICAL MONTHLY.

In the *Bulletin*, Mrs. Freeman commended the Georgia Auxiliary. She said, "Following the convention in New Orleans I attended the Georgia State meeting in Savannah. The regional health conferences, conducted by the Auxiliary and sponsored by the State Medical Society and State Board of Health, have been so successful that the House of Delegates passed a resolution recognizing the public health work of the Auxiliary as one of its *own* activities, to report to the House with other committees. I had the privilege of hearing the first report of the accomplished and far-seeing founder of these conferences, Mrs. J. Bonar White, of Atlanta, who was applauded to the echo, and how I wished the Doubting Thomases in other Medical Societies might have been present. The Georgia Medical Socitey knows a good thing when it sees it, and by using the Auxiliary to further its projects will practically double its own efficiency."

A new Auxiliary, that of the State of Washington, was admitted at the New Orleans Convention. The President, Mrs. H. J. Whitacre, of Tacoma, reported twelve counties organized with a membership of over four hundred. All of this accomplished in *one* year. Virginia will have to "speed up" if we are to keep pace with our progressive western states.

Sketch of Mrs. Freeman.

At the earnest request of the Press and Publicity Chairman of the National Auxiliary, permission is given to send you the following sketch of Mrs. Freeman:

Corinne Keen, is the daughter of the late William Williams Keen, M. D., of Philadelphia and Emma Corinna Borden, of Fall River, Mass. She is the ninth generation of Keens living on the banks of the Delaware, and on her mother's side lays claim to five Mayflower ancestors. She graduated at Vassar College in 1889 and was married on November 3, 1892, to Walter Jackson Freeman, of Philadelphia, later Professor of Laryngology in the Polyclinic, now the Graduate Medical School. She has five sons, all Yale graduates, two daughters, and eleven grandchildren. Two of her sons are physicians, Walter Jackson Freeman, Jr., of Washington, D. C., Professor of Neurology at St. Elizabeth's Hospital, and Norman Easton Freeman, research worker under Dr. Walter B. Cannon at the Harvard Medical School.

During the war, Mrs. Freeman worked in the Red Cross, and later was chairman of the South Philadelphia Woman's Liberty Loan Committee working in the Third, Fourth, and Victory Loans.

Following her husband's death in 1920, she was executive secretary of the Jefferson Alumni Society for the year of 1922, and inaugurated the Jefferson Alumni Fund. The years from March, 1923, to May, 1925, were spent in Europe for the education of her youngest children, and in January, 1926, she joined the newly organized Philadelphia Auxiliary. County secretary, vice-president, and president, state president, chairman of the

Philadelphia convention committee, and national president-elect, she has served six years' apprenticeship and is now entering upon her Presidential duties with high hopes for the future of the Auxiliary.

The President's Visit.

The happy visit to Missouri last Spring, of Mrs. Walter Jackson Freeman, then the National President-Elect brought to mind forcibly, in that state, the pleasure and profit incident to such occasions. It is at the earnest request of Mrs. M. P. Overholser, National Press and Publicity Chairman, that Mrs. Willard Bartlett, of St. Louis, a National Director and a leader in national and state Auxiliary organization service, permits her reflections on this subject to be printed. They are as follows:

WHEN THE NATIONAL PRESIDENT CALLS ON US HOW SHALL WE UTILIZE HER VISIT?

An occasion that happily comes to many state and country auxiliaries is a visit from the National President or President-Elect, and with it the question, What shall we do for, and let us add, with her?

The following suggestions apply with adaptation to any special guest:

With true Auxiliary spirit of good will, the first thought frequently is of her entertainment and of a full social program.

Surely no one will be more appreciative of such efforts than she, and more anxious for an opportunity to meet personally every woman possible and to confer on general and specific problems. That is her primary interest.

May I add incidentally, recalling the words of the wise man, "Save me from my Friends, I can take care of my Enemies," let us not Kill her with Kindness. Here now is where we check up and ask, How can we make the most of her coming? If we see clearly, think straight and consider its broadest aspect, we will recognize in the President's visit an opportunity. First, for stimulating the prestige, thereby the growth and influence of the Auxiliary; and secondly, an occasion for furthering our public relations and interpreting the profession.

If she has chosen a time when the medical society is meeting, an auspicious date, then there is no better way to begin than by securing the gracious gesture and formal recognition of her office by an invitation for her to speak briefly before the Society.

It is taken for granted the press chairman has secured in advance a picture or at least an interesting and dignified announcement of her coming to the city, in the main body of the daily paper, rather than a note in the social column The social side may well be included there. This press work is as much for the benefit of our own members and Medical Society as of the public. Of course, the President of the Medical Society will have been shown in advance the courtesy of a suitable notification. He is not a deviner of events. If we have done our part he will consider this an opportunity for the Medical Society.

As stimulating as was the recent visit of the President-Elect, Mrs. Walter Jackson Freeman, to the St. Louis Auxiliary, the most constructive service she rendered in her two days' visit was when presented to the Medical Society, bringing a greeting from her distinguished father, Dr. Wm. Williams Keen, the beloved teacher of many men present, and packing eight delightful minutes full of a glowing human picture of the Auxiliaries' place and work. So much for our first point.

Now for the second: Furthering public relations and interpreting the medical profession.

Let us plan to put the President in touch with outstanding socially minded leaders of our community in lines other than our own, while she is with us. Her coming might be worked into a splendid public relations day.

An illustration was the recent visit of our able National President, Mrs. Arthur B. McGlothlan, who came to St. Louis for the monthly luncheon of the Auxiliary on a day when the Medical Society does not meet.

However, an early morning conference had been arranged in advance with state officials of the Missouri Tuberculosis and Parent Teachers' Associations, at which plans for definite co-operation between them were consummated.

So let us give thought to making the most of national visitors.

Comments on Accepted Products

Cocomalt Used In Clinical Tests.

Important clinical tests with Cocomalt are being conducted all over the country. Whole groups of undernourished children show substantial gains in weight after taking this food-drink regularly. During the recent drought in Arkansas, for example, health officers fed Cocomalt to youngsters for forty days. At the end of that time, gains of from four to sixteen pounds were noted (depending largely on age). The average gain for the forty-day period was eight and one-half pounds—more than a pound a week. Children who missed the Cocomalt clinic or attended irregularly *showed no substantial gain.* Cocomalt is a delicious chocolate flavor food-drink that is almost twice as nourishing as plain milk, adding 110 extra calories to every glass. It contains 30 steenbock (300 ADMA) units of Vitamin D per ounce—the quantity recommended for one drink. Cocomalt is accepted by the American Medical Association Committee on Foods Samples sent to physicians on request. Write to R. B. Davis Co., Hoboken, N. J.

Simplifying Summer Infant Feeding Problems.

Vacation travel presents fewer difficulties in caring for infants on S. M. A. Instead of using milk from dairies of unknown standards, the mother in feeding S. M. A. is using a food made from milk which her physician knows to be produced under strict sanitary requirements and rigorous inspection.

Refrigeration is unnecessary because individual feedings of powdered S. M A. may be made up as needed. If the supply runs out, S. M. A. is available virtually everywhere in the United States in prescription pharmacies, from Skowhegan to Hollywood. S. M. A. is not a grocery product for adults, but a scientific antirachitic breast milk adaptation designed for infants.

S M. A. is made to resemble nature's own formula, breast milk, as closely as modern scientific knowledge and laboratory control can accomplish—certainly closer than a trial and error formula.

Truth About Medicine

In addition to the articles enumerated in our letter of June 25th the following have been accepted:

Livermeal Corporation.
  Liver Meal.
H. A. Metz Laboratories, Inc.
  Triphal.
    Ampules Triphal 0.025 Gm.
    Ampules Triphal 0.1 Gm.
National Drug Co.
  Scarlet Fever Streptococcus Toxin for the Dick Test.
  Scarlet Fever Streptococcus Toxin for Immunization.
  Scarlet Fever Streptococcus Antitoxin.
United States Standard Products Co.
  Rabies Vaccine—U. S. S. P. (Semple Method), seven vial packages.
  Rabies Vaccine—U. S. S. P. (Semple Method), twenty-one syringe packages.

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Ampoule Sodium Amytal, 0.25 Gm. (3¾ grains).—Each ampule contains the stated amount of sodium amytal (New and Nonofficial Remedies, 1932, p. 91) and is accompanied by a 2.5 c.c. size ampule of distilled water. Eli Lilly & Co., Indianapolis.

Ampoule Sodium Amytal, 0.5 Gm. (7½ grains).—Each ampule contains the stated amount of sodium amytal (New and Nonofficial Remedies, 1932, p. 91) and is accompanied by a 5 c.c. size ampule of distilled water. Ely Lilly &o Co., Indianapolis.

Ampoule Sodium Amytal 1 Gm. (15½ grains).—Each ampule contains the stated amount of sodium amytal (New and Nonofficial Remedies, 1932, p. 91) and is accompanied by a 10 c.c. size ampule of distilled water. Eli Lilly & Co., Indianapolis.

Ampoules Luminal-Sodium (Powder) 5 grains.—Each ampule contains 5 grains of luminal-sodium (New and Nonofficial Remedies, 1932, p. 85). Winthrop Chemical Co., Inc., New York.

Capsules Luminal-Sodium 5 grains.—Each capsule contains 5 grains of luminal-sodium (New and Nonofficial Remedies, 1932, p. 85). Winthrop Chemical Co., Inc., New York.

Luminal-Sodium Tablets, ¼ grain.—Each tablet contains ¼ grain of luminal-sodium (New and Nonofficial Remedies, 1932, p. 85). Winthrop Chemical Co., Inc., New York.

Luminal-Sodium Tablets, ½ grain.—Each tablet contains ½ grain of luminal-sodium (New and Nonofficial Remedies, 1932, p. 85). Winthrop Chemical Co., Inc., New York.

Liver Extract No. 343, 110 Gm. Bottle.—Each bottle contains 110 Gms. of liver extract No. 343 (New and Nonofficial Remedies, 1932, p. 248). Eli Lily & Co., Indianapolis, Ind. (Jour. A. M. A., July 2, 1932, p. 33.)

Rabies Vaccine—U. S. S. P. (Semple Method).—This product (New and Nonofficial Remedies, 1932, p. 369) is also marketed in packages of seven vials, each containing one dose; and in packages of twenty-one syringes, each containing one dose. United States Standard Products Company, Woodworth, Wis.

Intracutaneous Tuberculin for the Mantoux Test.—This product (New and Nonofficial Remedies, 1932, p. 376) is marketed in packages of one 1 c.c. vial containing diluted tuberculin sufficient for ten tests. Each dose of 0.1 c c. represents 0.0001 Gm. of tuberculin. The Gilliland Laboratories, Marietta, Pa. (Jour. A. M. A., July 30, 1932, p. 389.)

FOODS

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

Savita (Battle Creek Food Company, Battle Creek, Mich.).—A viscous mixture of extracts of brewers' yeast and vegetables (parsley, leek, celery, onions and carrots), salt and saccharated iron oxide. Savita is claimed to have a meat-like flavor and to be especially intended for the preparation of broths, bouillons or gravy and to add flavor to many dishes. It is also claimed to be a rich source of vitamins B and G and of dietary iron.

SMACO (207) Powdered Half-Skimmed Milk (S. M. A. Corporation, Cleveland).—A powdered spray-dried half-skimmed milk hermetically sealed in an atmosphere of nitrogen. This product is claimed to be intended especially for infant feeding for use wherever a partially skimmed milk is indicated.

PROPAGANDA FOR REFORM

Nirvanol.—The Council on Pharmacy and Chemistry reports that Nirvanol (distributed by the Heyden Chemical Co., New York) is stated to be phenylethylhydantoin and that, while it is supplied on request, no propaganda for it is being made by the distributor. At the present time Nirvanol is proposed primarily for the treatment of chorea. From a review of the literature the following conclusions appear justified: (1) That a fairly large percentage of patients suffering from chorea are relieved by Nirvanol; (2) that there is no evidence that the relief of chorea by Norvanol lessens the tendency to subsequent cardiac disease; (3) that there is no invariable relationship between the appearance of the various symptoms and the therapeutic effects; (4) that a specific hypersensitiveness to Nirvanol has not been proved; (5) that the side actions are always disagreeable, sometimes alarming, and often positively dangerous, if not even fatal; (6) that the treatment is too severe to justify its use except in those cases that do not yield readily to other treatment; (7) that Nirvanol should not be used in the treatment of chorea except in an institution where the patient is under close supervision. The Council concluded that the treatment of chorea with Nirvanol is in the experimental stage and that further investigation is necessary before an estimate of its value can be reached. (Jour. A. M. A., July 2, 1932, p. 33.)

Lambert Chemical Co., Inc., Exploiters of Phos-Phane.—Physicians have been approached by solicitors or alleged solicitors for the Lambert Chemical Co., Inc., of Washington, D. C. Physicians are invited to share in the profits which are to result through their prescribing of the firm's "Phos-Phane." Phos-Phane has not been accepted by the Council on Pharmacy and Chemistry. One of the forms which physicians have been asked to sign is the "Trade Acceptance" blank. When signed, this blank becomes for all intents and purposes, a promissory note by which the physician is buying so many bottles of Phos-Phane, agreeing to pay for them, and helping to get them placed in the local drug store on consignment. It must be quite obvious that any physician who goes into this scheme is violating one of the fundamental tenets of his profession. No medical man with a proper appreciation of his responsibilities will be financially interested in the exploitation of medicinal agents that he may be called upon to prescribe. (Jour. A. M. A., July 2, 1932, p 55.)

Comparative Studies of Mercurochrome-220 Soluble and Other Antiseptics.—The Council on Pharmacy and Chemistry reports that it has authorized publication of the report, "Comparative Studies on Mercurochrome and Other Antiseptics," by W. F. von Oettingen, O. V. Calhoun, V. A. Badertscher and R. E. Pickett. In authorizing publication of this report the Council directed that it be explained that Hynson, Westcott & Dunning have agreed to revise their advertising claims in accordance with the findings of the paper and that the Council had voted to continue the acceptance of Merchurochrome-220 Soluble, and the description of the product appears in New and Nonofficial Remedies, 1932. From the report of von Oettingen, *et al.* it appears that Mercurochrome cannot be relied upon to destroy bacteria that have penetrated into the living tissue of a wound or of the skin; it could do no more than disinfect the surface and the necrotic tissue. This limitation is shared more or less by all antiseptics so that no substance can be properly called a safe and certain wound antiseptics. No antiseptic takes the place of thorough cleansing and surgical treatment. When these are not practical, for "first aid" or for very superficial wounds, antiseptics are probably better than no treatment at all. The antiseptic efficiency of mercurochrome is not outstanding, and for skin disinfection the aqueous solution is distinctly inferior. The absence of irritation may be an advantage, especially with open wounds, and for prolonged treatment; but its limitations should always be borne in mind. (Jour. A. M. A., July 9, 1932, p. 127.)

Feeding Formulas for Infants in Lay Advertising.—The Committee on Foods reports feeding of an infant by routine feeding formulas and instructions distributed by food manufacturers, or according to directions, printed material, or advice of any person other than the attending physician who can personally observe the condition of the baby, may seriously endanger the health of the infant, and is considered to be in conflict with the best experience, authoritative judgment, and basic principles in infant feeding and is not permissible. No objection is taken to published directions for the preparation of mixtures for use in infant feeding. (Jour. A. M. A., July 30, 1932, p. 391.)

Book Announcements

The American Illustrated Medical Dictionary: A complete Dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc. By W. A. NEWMAN DORLAND, M. D., Member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association. Sixteenth Edition, Revised and Enlarged. Octavo of 1,493 pages, 941 illustrations, 279 portraits. Philadelphia and London: W. B. Saunders Company, 1932. Flexible and stiff binding. Plain, $7.00 net; Thumb Index, $7.50 net.

After a lapse of three years this popular lexicon is out with the most thorough revision it has ever had. Done under the supervision of an editorial committee of the American Medical Association, it becomes practically the official dictionary of the American profession.

An interesting feature to Virginia doctors is the fact that most of the new words—of which there are over 3,000—come through the collaboration of Dr. E. C. L. Miller, of the Medical College of Virginia.

In addition to the flexible back, it also has a stiff binding like other upstanding books.

H.

The Practical Medicine Series. Comprising Eight Volumes of the Year's Progress in Medicine and Surgery. Series 1931. Chicago. The Year Book Publishers, Inc., 304 South Dearborn Street. 12mo. Cloth.

General Surgery. Edited by EVARTS A. GRAHAM, A. B., M. D., Professor of Surgery, Washington University School of Medicine, etc., St. Louis. 8804 pages. Price, $3.00.

Obstetrics. Edited by JOSEPH B. DeLEE, A. M., M. D., Professor of Obstetrics, University of Chicago Medical School, etc., Chicago. **Gynecology.** Edited by J. P. GREENHILL, B. S., M. D., F. A. C. A., Attending Gynecologist, Cook County Hospital, Chicago. 665 pages. Price, $2.50.

General Therapeutics. By BERNARD FANTUS, M. S., M. D., Professor of Therapeutics, University of Illinois College of Medicine, Member Revision Committee U. S. Pharmacopoeia and of National Formulary Revision Committee, and LOUIS B. KARTOON, B. S., M. D., Instructor of Medicine, University of Illinois College of Medicine. 467 pages. Price, $2.25.

Dermatology & Syphilis. Edited by FRED WISE, M. D., Professor, and MARION B. SULZBERGER, M. D., Associate Professor, of Dermatology and Syphilology, N. Y. Post-Grad. Med. School & Hospital of Columbia University. **Urology.** Edited by JOHN H. CUNNINGHAM, M. D., Associate in Genito-Urinary Surgery, Harvard University, Post-Grad. School of Medicine. 472 pages. Price, $2.25.

Neurology. Edited by PETER BASSOE, M. D., Clinical Professor of Neurology, Rush Medical College of the University of Chicago. **Psychiatry.** Edited by FRANKLIN G. EBAUGH, A. B., M. D., Professor of Psychiatry, University of Colorado Medical School! Director Colorado Psychiatric Hospital, etc. 469 pages. Price, $2.25.

Tobacco Among the Karuk Indians of California. By JOHN P. HARRINGTON. Smithsonian Institution, Bureau of American Ethnology, Bulletin 94 United States Government Printing Office, Washington, D. C. 1932. For sale by the Superintendent of Documents, Washington, D. C. Price, 80 cents. Paper. 8vo. 284 pages.

Forty-Seventh Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution. 1929-1930. United State Government Printing Office. Washington, 1932. For sale by the Superintendent of Documents, Washington, D. C. Quarto of 1,108 pages. Paper.

United Fruit Company, Medical Department, Twentieth Annual Report. 1931. General Offices. Boston, Massachusetts. Made in United States of America. 8vo. 321 pages. Paper.

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Editorial

Ferret Out Potential Cancer!

"Let's in and ferret out" cancer!

No better time may come for the general practitioner than the present to actively push the campaign among his clientele, of ferreting out "spots," "lumps," "ulcers," "sores, "nodules," and the like in which potential cancer exists. In this period of slowed economic and depressed times, when urgency of crowded practice is not felt, and when medical, surgical, and special practice is more or less "depressed," may it not be fortuitous and opportune to grasp this time to push forward more intensively a campaign of search for incipient, latent, active or malignant defects, especially such as are easily detectable by periodical physical examinations? Such a campaign of effort to prevent and cure cancer must be, in the last analysis, an individual one—that is, it must be conducted by personal effort of medical practitioners on patients or persons coming within their field of service. Hence, it is necessary to engage the interest of every doctor in this matter. Effort "to carry the gospel" of cancer prevention can never find its best pace until the doctors of medicine and dental practitioners engage in the campaign with whole-heartedness and thoroughness, the like of which has not been heretofore brought into play. A keen sense of inquisitiveness must be aroused by each medical and dental practitioner to search for potential and possible factors that may culminate in cancer of the mouth. A sharp, sustained and vivid imagination as to the pathologic, and cellular changes of some uncured sore, some oral ulcer, some suspicious nodule, some indolent crack in the tissue, or some persistently dyspeptic, recurrent group of digestive symptoms must be applied in order to ever keep alert to the stealthy step of a possible invading cancerous growth.

Not only this in prevention, but also to ferret out already existing cancer growth before the irreparable stage has arrived, is another big urge of this problem. It is unquestionably true that there exist in the land thousands upon thousands of women alone who carry more or less unknown and unseen pathology, bordering upon the initial formation of actual cancerous cell growth that may be cured in a large percentage of cases, were the mass discovered and appreciated. To the urgent call of thousands, the land over, medical examinations may afford real protection and succor.

Then, there is that large group of cancer patients who are failing to receive the best treatment because of unscientific and unethical treatment. For these the medical profession may also do a helpful part in directing them to regular clinics for treatment.

Probably no one in the medical profession has done more to promote professional and public interest in the fight against cancer than Dr. Joseph Colt Bloodgood, of Baltimore. For more than a quarter of a century, by means of medical publications, in clinical lectures, in public lay meetings and in scientific gatherings, Dr. Bloodgood has taken a leading part in an effort to stimulate interest and dissemi-

nate knowledge in the prevention of cancer. As far back as 1915, Bloodgood made an inquiry into worldwide efforts of research in the problems of cancer. From this inquiry he learned that research had added nothing to the practical diagnosis and treatment of cancer up to that date. It must be remembered that as late as 1915 cancer throughout the world was recognized clinically, largely from its gross pathology. In spite of the large place that the microscope had won in the study of cellular pathology of tumors, this instrument had not won a place for use in the operating room in making a diagnosis from frozen sections. According to Bloodgood, the best clinics throughout the world depended on a check up of clinical and gross diagnosis in the pathological laboratory by microscopic study of material sent there. Likewise in this period, 1915, X-ray and radium in the treatment of cancer were receiving only scant appreciative attention from a small group of the medical profession throughout the world.

It was about 1913, that the American Society for the Control of Cancer was organized and began its worldwide efforts to carry forward the campaign in the early diagnosis and treatment of cancer. In spite of the effects of these forces, professional and lay, working to control cancer, and working valiantly through the intervening years, the need now for more thorough effort is apparent to all. Diagnosis and treatment have been quite perfected, but the disease still prevails in wide distribution. This is because potential factors, its incipient stages, and its early gross pathological forms are not soon enough brought under the management and treatment of forward looking, scientific and regular physicians.

How can these forces of skill in curing and controlling cancer be more effectively brought into play? Only by a wider and more thorough search and moderation of the factors that bring about the eventuating cancerous growth. This point may be illustrated by two common prevailing conditions: 1st, in cancer of the mouth. Ulcers, cracks, fissures and sores within and about the mouth should be assiduously searched for by dentists and other specialists practicing about the mouth, by general practitioners when patients apply for treatment for other things, and such lesions should be cured. 2nd, cancer of the cervix should be ferreted out. This group of lesions offers more restricted possibilities in the number of searchers. The importance for examining the cervix should be earnestly and vigorously sought. It is not enough to wait until a chance offers, but it should be the effort of practitioners to seek to create in the minds of female clientele the wholesome need for a periodic examination of the cervix. This can be done by obstetricians, gynecologists, surgeons and general practitioners. Periodic examination, especially in the post-menstrual period, is particularly important, as in this period of female life, failure to make inspections here is most common. It should be routine for practitioners to advocate periodical pelvic examinations in this period of life. Such general action of the medical practitioner would make for decided advance in prevention and cure of this malady.

The State health officials and the public lecture platform may materially assist in this field of effort by an educational campaign on cancer. Certainly, the subject may have vigorous assistance from the lay press. At the birth of every baby, the first steps may be taken to prevent cancer. Here, the family physician or general practitioner or the obstetrician has the big opportunity, both in the doing of skilful work and in the implantation of an educational truth about cancer control.

As a prominent leader in this country, fighting for cancer control by prevention and cure, Dr. Bloodgood says that he is now living in the "fifth decade of a continuous cancer survey" and, based upon this vast experience, he holds that the doctor is the chief hope in the fight against cancer.

The forces of public health, newspapers, magazines and radio are useful and important, but the individual efforts of wide-awake, skilful, careful doctors, the land over, must be added in order to ferret out and kill cancer.

Diet in Bright's Disease.

Oldish doctors of the present day naturally assume something of the mental attitude of a "doubting Thomas" as they read of and observe certain radical changes or reforms creeping into medical papers, on the feeding of protein to patients with Bright's disease. Before the turn of the century, probably no standard of dietary absolution was more established than that the patient with Bright's disease should eat little or no meat. *Red* meat was tabooed. Now we read of strange suggestions that this interdiction of meat in nephritis is an error and should be abandoned as it has

been practiced in the past. Of course, a change of front like this is nothing new or startling. Surgical and medical progress glitters with changes and modifications of previously established and treasured "nuggets of truth" in practice. So after all, it is not to be wondered that now we see reasonable suggestions of liberal use of protein in the diet of the nephritic. Changes must be taken with certain scientific caution, and as one notes the announcement of a reversal of method, one should not altogether let hold of that which is known to be good while reaching for that which promises even greater good: a promising experimental forecast may not have fruition in fact; there may be a modicum of truth there but not the full measure as suggested in first reports.

McLester* has presented for us a statement of recent observations on protein in nephritis and has succinctly sketched the reasonable outline of the changing view of protein feeding in various types of nephritis. As intimated, the whole question of the protein problem in nephritis is unsettled. Even in health, the harmful effects of meat eating have been overplayed or over emphasized, while the essential needs of protein in the daily diet for purposes of repair and strength have been allowed to remain in the background. Of course, in a comment of this sort, one cannot present evidence to show that such a change of attitude toward protein intake is more or less justified. However, it seems reasonable, in the light of recent research, to say that to enjoy full health and a vigorous body, a consumption of protein food must be abundant and adequate. In Bright's disease it is held that the same reasoning should be applied. McLester states the case with intriguing effect as he cites the instances of the forces involved in the process of an acute Bright's disease. The infection which causes the acute nephritis produces a toxic destruction of body protein, and then later brings about a marked loss of albumin through the urine. So here we have a toxic destruction of protein on the one hand and a leakage and loss of protein in the urine on the other. This two-way loss brings to the body "a measurable plasma protein deficit." As a result of this deficit, water balance in the body is profoundly upset and edema results and aggravated symptoms of Bright's disease obtrude and persist. In acute hemorrhagic nephritis, a majority of cases, where a low level of plasma protein continues beyond the first week, resolve themselves into chronic nephritis. It was found that by permitting a liberal intake of protein, adequate in amount to make good the deficit, the chances for complete recovery were favorable. Not only in acute nephritis, but also McLester points out in that "form of chronic nephritis which has been called degenerative Bright's, by Addis, and chronic nephritis with edema, by Christian, a liberal protein intake is imperative."

The argument of looking back into the body, beyond the diseased kidney, and recognizing the needs of replacement of protein in the muscles, blood, nerves, and glandular system (that great functioning protein mass of tissue) and furnishing by protein-intake replenishment of losses accruing through the diseased kidney and as the result of the toxic processes that brought out the kidney pathology, seems forceful and convincing. Against this remains the plea that as it is the function of the kidney to eliminate the end-products of the body protein, it would seem questionable to add more work to the diseased kidney, but, as "the hair of the dog is good for the bite," by preventing low level of plasma deficit, the kidney is more able to restore itself to normal function. When it comes to a type of chronic nephritis (involving sclerotic changes), the argument for increased protein intake does not hold good because, as Vanslyke has pointed out in this type of nephritis, plasma protein content was entirely normal. But McLester feels that even in this form of Bright's, there is a tendency to restrict protein too much. There has consequently resulted increasing body weakness and progressive anemic symptoms. To combat these malignant symptoms, McLester advocates a more liberal intake of protein. In acute and chronic edematous nephritis 150 grams daily and in nephrosclerosis 75 grams daily is a general recommendation of this author.

Hemorrhage From the Stomach.

This is a practical problem in practice. Practitioners are not infrequently confronted with hemorrhage from the stomach in the course of work. The problem of etiologic diagnosis under such an exigency is urgent, the immediate and opportune treatment is important, and continued management of the case

*McLester. J. A. M. A., July 16, 1932.

is a responsibility of no mean importance. So it is not out of place to direct our readers' attention to a paper recently published that deals with general considerations of this subject. The paper, entitled "Diffuse Hemorrhage from the Stomach," is by Edward L. Bortz, M. D., of Philadelphia, and appears in *Archives of Internal Medicine*, for July, 1932.

From quite an assembly of possible causes of gastric hemorrhage, one may take those most frequently acting, as carcinoma; ulcer (acute, subacute and chronic); certain infections as produce gastritis or alcoholism; cardiovascular diseases (like heart failure, endocarditis, thromboses, hypertension, aneurysms, ruptured varices in the esophagus); blood disorders, as leukemia, anemia, the purpura, and renal diseases, cirrhosis, syphilis, and allergy; and from ingestion of such chemicals as lye, iodine, etc.

Probably ulcer, cirrhosis of the liver, Banti's disease, heart disease, and carcinoma rank as foremost of etiologic factors in diffuse gastric hemorrhage. The location of the bleeding point is difficult as is the origin of the hemorrhage. The suddenness, the amount and the absence of premonitory symptoms make gastric hemorrhage difficult of complete diagnosis, but a thorough physical and laboratory study of the patient offers an explanation of the symptoms sooner or later and such diagnostic features discovered serve to direct the course of treatment to be pursued, looking to prevention of the recurrent hemmorhage.

In the matter of treatment, immediate and ultimate therapeutic measures are indicated. The first stage involves "shock" and exhaustion. This calls for absolute rest, application of the ice bag to epigastrium, possibly hypodermic administration of morphine, lowering of the head, and interdiction of food. The lower bowel should be washed out and for forty-eight hours no food given. Transfusion is a moot question, but it would be indicated if hemorrhage had gone extremely far and was continuing. Such a measure not only tends to restore hemoglobin, but to favor a stoppage of bleeding. At least, this is a view held by some internists. If a patient's cells have fallen to two million, it is common practice to give 300 to 500 c.c. of blood by transfusion. In the case of bleeding from the mucosa of the stomach, liquid extract of Ceanothus americanus has been given, and in our experience it has been helpful. In one patient who has suffered eighteen large gastric hemorrhages during the past ten years, this remedy has been uniformly relied upon and used in conjunction with other measures. Normal horse serum, or the patient's own serum, in doses of 2 to 10 c.c., have been tried with effectiveness.

Soper has called attention to treating gastric hemorrhage by a retention catheter introduced by the nasal orifice. Through this the stomach is lavaged with cool water. By this means new hemorrhage may be easily and quickly detected and the acid secretions withdrawn. On the fifth day the tube is passed on into the duodenum and the administration of high caloric food is begun. Operative procedures at this stage have proved to be wanting in safety and have doubtful value.

After cessation of bleeding has been accomplished, nutritional problems become paramount in importance. Duodenal feedings through the Jutte tube have proved of immediate value in getting adequate nourishment to the patient at the critical period. Blood filled with metabolites serves to the body essential requirements for reconstruction from the loss of blood and for rekindling the fires of body strength so needed by these patients. To food may be added liver extract and iron. All focal infections should be removed and continued rest for recuperative value should be practiced.

Should indications of gastric hyperacidity or acidity present themselves, atropine should be administered from one to three times a day. Calcium gluconate by mouth and parathormone by subcutaneous injection have been suggested where calcium deficiency is found.

Fundamentally, the problem remains of removing the factors which originated the hemorrhage. This part of the problem may be in the domain of surgery, as would be the case in intractable ulcer or in Banti's disease, when removal of the spleen has been known to accomplish favorable results in prolonging life.

If the problem is one that lies in the field of medicine, such as cirrhosis of the liver, arteriosclerosis, heart decompensation, syphilis or blood dyscrasias, then therapeutic management lies in the realm of internal medicine and requires the highest order of study and effort to forestall the recurrence of hazardous gastric hemorrhages.

President's Message

The Annual Meeting.

At this season of the year the President naturally feels more acutely the responsibility of his office, as the end of his term approaches and he contemplates with anxiety the completion of plans and arrangements for the annual meeting. As all of you know, we are meeting this year in Richmond, and it is the sincere desire of the officers of the society and those most interested in its welfare that we have a successful and enthusiastic meeting; this, of course, will be in a large measure determined by the number attending the clinics and exercises. With a membership of over 1,800 we should have a registration of at least 1,000.

The local committee can be depended on to do all in their power to contribute to our convenience, welfare and comfort. The program will be practical, entertaining and instructive. In addition to the scientific papers of the regular program, plans are being made to arrange a number of clinics to be conducted by visiting and local clinicians under the direction of the faculty of the Medical College of Virginia. The committee plans to arrange the program so that there may be ample time for full and free discussion of each paper, since we feel that often the discussion of a subject brings out more useful information than the mere reading of an article. The clinics will be an important feature of the meeting, and will be specially interesting to the alumni of the college, who will enjoy this opportunity to renew contacts with their former teachers and classmates.

It is our intention to send a special message to the officers of each component society asking that a special meeting of each society be held to canvass the members and urge as many as possible to attend the annual meeting in Richmond. It is important that a delegate and alternate be sent by each society and that they attend all the meetings of the House of Delegates, and come prepared to express the views of their local societies on questions and points that are likely to be discussed.

Our State Society was organized in Richmond, November 2, 1870. This will be our 62nd anniversary. Of the 90 charter members who met and organized the Society, none are living today. Would it not be appropriate and interesting for us to take some special action in honor of those members who laid the groundwork for all that the Medical Society of Virginia and organized medicine has accomplished in this State in the last half century?

We are meeting in our new home in the new building of the Richmond Academy of Medicine and the Library of the Medical College of Virginia. Let all who have neglected to take a vacation this summer join the crowd in Richmond. Some of us are behind the times and need to rub shoulders and swap ideas with our friends and neighbors. You owe it to yourself, to your family, and to your patients to take a vacation. You will never have a better opportunity than November the first, and never a better place than Richmond.

I. C. Harrison, M. D., *President,*
Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Second Circuit of Courses in Prenatal and Postnatal Care.

Richmond, Petersburg, Farmville and Lawrenceville are the centers for the second circuit of post-graduate courses under the instruction of Dr. Maxwell E. Lapham, Field Clinician of the Joint Committee on Prenatal and Postnatal Instruction. The classes began in the week of August 22nd.

Because of the summer recess of the several medical societies, the organization of the second circuit has proceeded under some handicaps and comparatively slowly. Even the required approval of the course by the local profession had to be secured by informal means in two cases. In Richmond Dr. R. Finley Gayle, Jr., and Dr. James H. Smith, President and President of the Board of Trustees,

respectively, of the Richmond Academy of Medicine, by conference with individual members of the Board to be ratified at a later meeting, obtained authorization for a class. Almost single-handed and alone Dr. F. N. Mallory established a class in Lawrenceville by submitting an application signed by every physician of Brunswick County except one, to whom the matter could not be presented at the time, and by furnishing most of the required minimum enrollment of ten. In Farmville the class was approved by unanimous vote of the staff of the Southside Community Hospital at its meeting on July 11th, and a committee consisting of Drs. Geo. A. Arhart, W. R. Martin and H. C. Rucker, was formed to work with Dr. Ray A. Moore, member of the Joint Committee, in organizing the class. A special called meeting of the Medical Faculty of Petersburg on July 28th unanimously approved the course and set up a local committee, composed of Dr. Ruth Mason-Grigg, Chairman, and Drs. Wright Clarkson, J. Bolling Jones and W. A. Reese, to take active charge of the conduct of the class.

The unique feature of the new circuit is the offering of a class for colored physicians in Petersburg. A committee of the Old Dominion Medical Society had requested the Chairman of the Joint Committee to offer some of Dr. Lapham's classes for their members, and as the educational center for Negroes in Virginia is located in Petersburg, it seemed expedient because of their great interest to establish an experimental class there on the same basis as that upon which other classes are formed. A committee composed of Dr. W. F. Clarke, Chairman, and Drs. F. L. Brown, J. B. Darden and W. B. Greene arranged for the enrollment of physicians of their race.

At this writing the enrollments for the new courses are hardly more than half complete. The details for the classes are as follows:

Farmville: The class meets on Mondays, beginning August 22nd. at 3:00 P. M. in the Staff Room of the Southside Community Hospital. *Enrollments:* Drs. J. R. Bailey, J. M. Habel, T. G. Hardy, T. E. Knight, Ray A. Moore, G. L. Morriss, J. Weldon Smith, Joseph H. Smith, W. E. Smith, C. S. Stone and J. P. Trent.

Lawrenceville: The class meets on Tuesdays, beginning August 23rd, at 11:00 A. M. (hour of subsequent meetings to be decided by the class) in the Public Health rooms. *Enrollments:* Drs. T. H. Anderson, F. N. Mallory, R. H. Manson, C. E. Martin, M. H. Tredway, J. B. Vaiden and T. H. Valentine.

Petersburg: The class for colored physicians meets on Wednesdays, beginning August 24th, at 3:00 P. M. at the Virginia State College for Negroes. *Enrollments:* Drs. F. L. Brown, W. F. Clarke, J. B. Darden and W. B. Greene.

Petersburg: The class meets on Thursdays, beginning August 25th, at 3:00 P. M. in the Petersburg Hospital. *Enrollments:* Drs. Wright Clarkson, Joel Crawford, George S. Fultz, S. E. Gunn, J. L. Hamner, J. H. Hargrave, R. T. Hawks, C. T. Jones, H. C. Jones, J. Bolling Jones, C. W. Lynn, Ruth S. Mason-Grigg, Randolph McCutcheon, M. F. McKinney, W. A. Reese. E. W. Young.

Richmond: The class meets on Fridays, beginning August 26th, at 3:00 P. M. in the Out-Patient Department of the Medical College of Virginia at 11th and Clay Streets. *Enrollments:* Drs. J. J. Anderson, B. B. Bagby, Greer Baughman, H. A. Bullock, R. S. Faris, J. B. Fisher, Alexander McLeod, A. C. Monroe, W. H. Parker, J. K. Richardson, J. H. Winfrey, A. E. Turman and J. W. Turman.

Eastern Shore Course at Nassawadox

Dr. Lapham's two week's course in the Northampton-Accomac Memorial Hospital has proved successful in keeping with former courses. In spite of the difficulty of attendance every day in the sizzling part of summer, the course during the first week had an average attendance of fourteen. The doctors enrolled are: Drs. S. K. Ames, W. M. Burwell, C. E. Critcher, J. LeC. DeCormis, H. L. Denoon, O. R. Fletcher, J. G. Goode, W. C. Henderson, J. W. Jackson, S. S. Kellam, D. L. P. LeKites, J. M. Lynch, A. A. Mathews, John W. Robertson, R. J. White, A. F. Wood. Visitors who have attended include Drs. C. J. Bradshaw, W. T. Green, W. W. Kerns, G. W. Holland, J. R. Hamilton, and Vaughan.

Final Report on the First Circuit

The final bona fide enrollments for the five centers in the first circuit were seventy-four physicians, a total which excludes four who enrolled but never attended. In addition, twenty-nine other persons, mostly physicians, but including a scattering of nurses and medi-

cal students, visited the classes. The rate of attendance was commendably high, 76.8 per cent. The average attendance each week, including members of the classes and visitors, was sixty-two. Sixteen physicians achieved the distinction of perfect attendance. The complete details for the first centers are presented in the table below:

SUMMARY FOR THE FIRST CIRCUIT

	Enrolled	Days Attended by those enrolled	Days Attended by Visitors	No. Visitors	Average Attendance	Per cent Attendance of those enrolled
Nelson County	8	65	--	--	6.5	81.3
Lynchburg	13	106	28	15	13 4	81.6
Lexington	14	92	4	4	9.6	65.7
Staunton	18	157	9	5	16.6	87.2
Charlottesville	21	148	11	5	15.9	70.5
Total	74	568	52	29	62	76.8

FUTURE COURSES

The first half year in the instructional program in prenatal and postnatal care will be finished with the close of the second circuit at the end of October. Dr. Lapham, the Field Clinician, will spend the first week in November in attendance at the meeting of the Medical Society of Virginia in Richmond. Immediately thereafter new courses will be begun to extend into February, with a two weeks' break at the holiday season. Thereafter, a fourth circuit will be organized to consume the remainder of the first year's program. Whether the program will be continued during the second and third years depends, of course, upon the favorable action of the Medical Society of Virginia and the grants-in-aid made by the Commonwealth Fund.

The location of the third and fourth circuits is yet undecided. The possible areas are Southside Virginia, South Tidewater, the Northern Valley, or the Southwest.

GEO. W. EUTSLER,
Secretary Joint Committee.

Proceedings of Societies

The Northern Neck Medical Association

Met at Warsaw, Va., in regular semi-annual session, on May 26, 1932. Dr. Samuel Downing, of Newport News, presided. This was one of the most largely attended meetings for a number of years, there being, in addition to members, doctors from Washington, Fredericksburg and Richmond, who added greatly to the interest of the meeting. Besides papers from the local men, there were interesting and helpful papers by Dr. A. Ray Dawson, of Walter Reed Hospital, Washington, D. C., and Drs. T. N. Barnett, James H. Smith, D. G. Chapman and W. L. Peple, of Richmond.

Dr. E. R. Moorman, who had recently located at Kilmarnock, was elected a new member of the Association and delegates and alternates were elected from the four counties composing this organization to represent the Society at the Richmond meeting of the Medical Society of Virginia.

It was decided to hold the next meeting at Montross, Va., on the fourth Thursday in October, 1932.

R. E. BOOKER, *Secretary.*

The Fairfax County Medical Society

Held its annual meeting on August 4th and elected the following officers for the ensuing year: President, Dr. William P. Caton, Accotink; vice-presidents, Drs. Jessie T. Scott, Oakton, and S. T. Noland, Clarendon; secretary, Dr. A. L. Carson, Fairfax; and treasurer, Dr. F. M. Brooks (re-elected), Fairfax Station. Delegate and alternate were also elected for the Richmond meeting of the State Society.

It is of interest to note that the new president, Dr. Caton, has been secretary of the society for twelve years and has filled this position most acceptably.

The Lee County Medical Society

Met at Jonesville, Va., on August 1st for its regular meeting, with Dr. G. B. Setzler, Pennington Gap, presiding. After a most excellent dinner by the hosts, Drs. J. B. Muncy and T. B. Ely, the business session was held. Dr. T. H. Hutchinson, who has recently located at Pennington Gap, was cordially received as a fellow of the Society. Delegate and alternate were elected to represent the Society at the

Richmond meeting of the Medical Society of Virginia.

An interesting feature of the program was the report of a case of Malta Fever which was brought to the hospital at Pennington Gap. Dr. Setzler, in reporting this case, presented a very full description of the disease and its occurrence. He stated that while this disease is considered a tropical and subtropical one, it has made its appearance in every state in the Union and he had found that in 1929, thirteen hundred and five cases were reported as having occurred in the United States.

W. J. Innes, *Secretary.*

The Fauquier County Medical Society

Was entertained by Dr. John T. Sprague and Dr. M. B. Hiden, at "Dunworth," the residence of Dr. Sprague, August 15, 1932. All of the physicians of Fauquier, Culpeper, Loudoun and Rappahannock Counties, and many of the physicians from the Counties of Prince William, Fairfax, Arlington and the cities of Front Royal, Winchester, Alexandria and Fredericksburg were invited, as also several members of the Hospital Board and several prominent citizens. Each man was invited to bring one lady guest. Dr. Karl Blackwell, of Richmond, who was visiting in this section, was also invited. All of the cities and counties were well represented, there being an attendance of seventy.

The President and Chief of Staff, Dr. Richard Mason, presided. An excellent talk was given by an insurance expert on the subject of "Cheaper Automobile Insurance for Physicians," and was interesting and well received. Drs. Charles H. Armentrout, Flint Hill, and A. T. Sheffield, Sperryville, were elected to membership and recommended for medical practice in the local hospital, and Dr. D. T. Saffer, Middleburg, was also endorsed for medical practice at the hospital. Delegate and alternate were elected to the meeting of the Medical Society of Virginia in Richmond, November 1st-3rd, and the following officers were unanimously elected for the ensuing year: President of the Society and Chief of Staff of the Fauquier County Hospital, Dr. John T. Sprague, Warrenton; vice-presidents and assistant chiefs of Hospital Staff, Drs. Vaden L. McCullers, Remington, and Stewart McBryde, Manassas; treasurer, Dr. Henry L. Townsend, Marshall; and secretary, Dr. M. B. Hiden, Warrenton.

The following subject was then proposed for discussion, "Has the Medical Society of Virginia Been an Advantage or a Disadvantage to the Rural Practitioner?" Dr. M. B. Hiden gave a brief outline of all that he had heard said in favor of and in disfavor of the State Society. This subject was then discussed most enthusiastically by the following physicians: Dr. John A. Gibson, Leesburg, Dr. Sam W. Maphis, Warrenton, Dr. Richard Mason, The Plains, Dr. Wade C. Payne, Haymarket, Dr. John T. Sprague, Warrenton, Dr. W. O. Bailey, Leesburg, Dr. G. Frank Simpson, Purcellville. It was the general consensus of opinion that the State Society should be run more for the Rural Practitioner and less for the Specialist, and that the State Society should appear less in sympathy with State and Federal Medicine.

Dr. Richard Mason then brought up the weekly report of communicable diseases now required by the State Board of Health. This subject was thoroughly discussed by the following physicians: Dr. M. B. Hiden, Dr. J. A. Gibson, Dr. S. W. Maphis, Dr. W. C. Payne, Dr. J. T. Sprague, Dr. Stacy Noland, Dr. W. O. Bailey, Dr. G. Frank Simpson. It was the opinion of these speakers that the State Board of Health was asking too much and that there was a limit to what they should expect the local physicians to do. The speakers expressed themselves perfectly willing to co-operate with the State Board of Health as far as necessary for the protection of the community, but these physicians were of the opinion that long and detailed weekly reports were unnecessary and were too much for the State Department of Health to ask.

Dr. W. D. Sydnor, Mayor of Hamilton, Va., then made a very humurous and delightful speech on "Moonshine and Ladies." Dr. M. B. Hiden made a short announcement on the following subjects: "A New Operation for Appendicitis Acute, Divised and Used at the Local Hospitals," "A New Operation for Appendicitis Ruptured, Also Divised and in Use at the Local Hospitals," "The Use of Intramedullary Grafts of Fresh Beef Bone in Fractures of the Femur and of the Humerus," which have been used successfully a great number of times in this locality, "A Lecture by Dr. J. Shelton Horsley, of Richmond, Va., on Cancer Control, illustrated with a moving picture, soon to be given in this section." Dr.

Hiden stated that the operations mentioned above had been reported before the State Medical Society, had been published in the State Medical Journal, and had been complimented on favorably by a number of prominent surgeons. He urged all of the doctors and guests to attend Dr. Horsley's lecture.

There being nothing else of importance to be taken up at this time, the meeting adjourned and a most delicious supper and other refreshments were served by Dr. and Mrs. Sprague, the crowd departing about 1:00 A. M.

M. B. Hiden, *Secretary.*

News Notes

Richmond Meeting of the State Society.

Now that doctors are returning from vacations, our thoughts should turn to the annual meeting of the Medical Society of Virginia, which is to be in Richmond on November 1st, 2nd and 3rd. The list of titles in hand guarantees the discussion of a number of interesting subjects.

A few questions have been received for the "Question Box." We can continue to receive these until September 10th, though the time limit for titles for papers was reached on September 1st. The Question Box is a new feature and we hope may prove helpful.

Societies which have not reported names of their delegates and alternates to the Secretary, are requested to send them to the Society's Office by September 15th. This list is to appear in the October issue of the Monthly, which will also carry the Preliminary Program of the Richmond meeting.

Medical Society of Virginia Changes Its Address.

After nearly thirteen years in one location, the Society has changed its quarters and is now domiciled in the splendid new building of the Richmond Academy of Medicine at 1200 East Clay Street, in Richmond. This should be readily accessible to doctors visiting and living in Richmond as it is just across the street from McGuire Hall of the Medical College of Virginia and convenient to all the hospitals of the College. The office is quite attractive and visitors will be welcomed at any time.

The Academy of Medicine building and the new library of the Medical College of Virginia are under one roof though they are practical in the form of two units. The Academy building fronts on Clay Street while the Library has its entrance on Twelfth. The stack rooms of the Library will provide space, as needed, for approximately 100,000 books. The Academy building, in addition to housing the office of the State Society, has a most attractive lounge for its members and guests, an auditorium which will accommodate about 250, several committee rooms, and a dining hall and kitchen. Both units consist of two stories and basement. A special attraction of the Academy building is the room in which will be housed the valuable collection of books and papers which have been given the local society by Dr. Joseph L. Miller, of Thomas, W. Va. The formal opening of the Academy building will be on the evening of September 20th, on which occasion there will be a number of invited guests.

Buxton Clinic Opened.

On July 18th. the Buxton Clinic, Newport News, Va., which is to be operated in conjunction with Elizabeth Buxton Hospital, was formally opened to the public. Governor John Garland Pollard was the principal speaker at the exercisse which were held in the morning. Immediately following these, there was a reception in honor of the distinguished guests. It is estimated that from 1,000 to 1,200 people visited the Clinic for the exercises and reception.

The Clinic building was constructed at a cost of approximately $100,000 and contains offices, laboratory equipment, consulting rooms for the members of the staff on the first and second floors, and has nurses' quarters on the third floor.

In the evening, the graduation exercises were held for the ten graduates from the Training School of the Hospital, and Mr. Homer L. Ferguson was the principal speaker on this occasion.

Dr. Joseph T. Buxton was the founder of the Elizabeth Buxton Hospital in 1906 and has continued at its head since that time, making additions and improvements constantly. The Clinic seems to leave nothing to be desired—certainly for the present.

Married.

Dr. Johnson McGuire, son of Dr. and Mrs. Hugh McGuire, of Alexandria, Va., and Miss Elizabeth Eton Livingood, both of Cincinnati, Ohio, at the summer home of the bride in Quebec, June 5th. Dr. McGuire is connected with the medical department of the University of Cincinnati.

Dr. Blanton L. Hillsman and Miss Evelyn E. Holdcroft, both of Richmond, Va., July 26th.

Dr. William E. Tomlinson, Jr., and Miss Margaret Corinne Peaco, both of Richmond, Va., recently. Dr. Tomlinson is an alumnus of the Medical College of Virginia of the class of '29.

Dr. John Thorpe Metcalf, of the class of '30, Medical College of Virginia but now of Jersey City, N. J., and Miss Dell Catherine Fleming, Richmond, Va., August 5th.

News Notes from the Medical College of Virginia.

Several thousand technical volumes composing the library have been transferred from McGuire Hall to the new library building adjoining the Richmond Academy of Medicine. While at present the library includes practically 20,000 volumes the stack rooms of the new building will provide space, as needed, for some 100,000 books. The college library building and the adjoining new building of the Richmond Academy of Medicine are seen as a fulfillment of long cherished hopes of the college and the medical profession.

Dean Wortley F. Rudd, of the School of Pharmacy, and Dr. W. G. Crockett, professor of pharmacy, attended the annual meeting of the American Pharmaceutical Association held August 22nd to 27th, in Toronto, Canada. At the Toronto meeting Doctor Crockett presented a paper prepared in collaboration with Mr. W. M. Fraser and G. V. Thompson of the School of Pharmacy. This paper was the result of research work done by Dr. Crockett and two assistants in the behavior of ethynitrates in copaiba emulsions.

During the month of July 4,889 visits were made to the outpatient department of the college, the maximum number of patients for one clinic day being 265. 1,118 tests were made and 1,503 prescriptions filled by the drug department of the college. Of the 4,889 patients receiving service in the outpatient department only 35 per cent were able to pay anything toward the costs of the service to the patients. For the same month last year only 3,945 visits were made, or a gain of 944 visits.

In Charge of Orthopedic Surgery at University of Virginia.

Dr. Robert V. Funston, recently of Detroit, Mich., has been elected professor of orthopedic surgery in the University of Virginia, School of Medicine, and assumed his new duties on July 1st. This is the position formerly held by Dr. Allen F. Voshell who resigned to go to Baltimore.

Dr. Funston is a native Virginian and graduated from the University of Virginia in 1918. Upon completion of his service in the World War, he became connected with the department of orthopedic surgery in the University of Iowa and remained there until 1922 when he entered practice in Detroit. He has been very active in orthopedic work in that city and, as a surgeon with the Michigan Crippled Children's Commission, has held clinics throughout that state.

Appointments on Committee Work of State Society.

Dr. W. L. Powell, Roanoke, has been appointed chairman of the Committee on Group Societies of the Medical Society of Virginia, to fill the vacancy caused by the death of Dr. Charles R. Grandy. Dr. Wm. Lett Harris, Norfolk, has been appointed a new member of this committee of which Dr. W. B. McIlwaine, Petersburg, is the third member.

Dr. Clarence Porter Jones, Newport News, who has been a most active member of the Walter Reed Commission of the State Society since its formation several years ago, succeeds Dr. E. C. S. Taliaferro, deceased, as chairman. Dr. O. T. Amory, Newport News, has been appointed a new member. Other members of the Commission are Drs. H. S. Hedges, Charlottesville, P. W. Boyd, Winchester, and James D. Clements, Ordinary.

The Southwestern Virginia Medical Society

Will hold its regular semi-annual meeting on September 20th and 21st in Roanoke, Va., with headquarters at Hotel Roanoke. It is announced that there will be a number of very excellent papers on the program. As this is the annual meeting, the election of officers will be held at this time. Dr. George A. Wright, Marion, is president, and Dr. A. M. Showalter, Christiansburg, secretary-treasurer.

Speakers for Educational Meetings.

The Department of Clinical Education of the Medical Society of Virginia, in response to the request of officers and chairmen of program committees of local societies, has prepared a list of clinicians from the faculties of Virginia's two medical colleges, who have volunteered to make addresses and demonstrations at meetings accessible to them.

This Department, as the educational agency of the Medical Society of Virginia, stands ready to assist in any way it can the scientific and instructional programs of the component and constituent societies.

Officers who have not received a copy of this list may have one by writing Mr. George W. Eutsler, exceutive secretary of the Department of Clinical Education of the Society, at Box 1487, University, Va.

Dr. O. W. Carper,

Of the class of '31, Medical College of Virginia, who recently completed a year's service at the State Hospital, Hazleton, Pa., has located at Front Royal, Va., where he will be engaged in general practice.

Dr. Fred Taylor Renick

Has located at Crozet, Va., where he is engaged in general practice. He graduated from the Medical College of Virginia in the class of '31 and interned at the Old Soldiers' Home in Richmond during his senior year. He recently completed a year's service at Gallinger Municipal Hospital, Washington, D. C.

Dr. John C. Neale, Jr.,

Also of the class of '31, Medical College of Virginia, recently completely his internship at Memorial Hospital, Richmond, Va., and has located at Hilton Village, Va., for the general practice of medicine.

Win Commissions in Medical Corps of U. S. Army.

Four young Virginia doctors were early in August commissioned as first lieutenants in the U. S. Army Medical Corps and assigned to military posts as follows: Dr. Achilles L. Tynes, Jr., of Staunton, to Station Hospital, Fort Sam Houston, Texas; Dr. Edward M. Sager, of Petersburg, to Walter Reed General Hospital, Washington, D. C.; Dr. Robert B. Skinner, of Petersburg, to Fitzsimons General Hospital, Denver, Colo.; and Dr. John R. Copenhaver, of Marion, to Fort Banks, Mass.

Drs. Tynes and Skinner graduated from the University of Virginia, School of Medicine in 1930, and Drs. Sager and Copenhaver from Medical College of Virginia in the same year.

Dr. Roy K. Flannagan,

In connection with his work as Assistant State Health Commissioner, has been detailed by Dr. Draper with the approval of Governor Pollard, to act as Medical Advisor to the State Department of Public Welfare. In this capacity, he will visit the jails in Virginia with the idea of working out a plan for standardizing the manner of handling ill inmates and improving the sanitation of the buildings.

Loss by Fire

Dr. Carter Weisiger, Cumberland, Va., suffered a heavy loss by fire the latter part of July, when much of the business section of the town was totally destroyed. Dr. Weisiger not only owned and operated the drug store which was destroyed but also owned several of the other buildings.

Dr. I. C. Riggin

Has returned to Virginia and on August 1st entered upon his new duties as director of county health work in Virginia for the State Department of Health. He has recently been an executive with the American Heart Association with headquarters in New York City, but has also had wide experience in public health work. He has taken the position left vacant by the resignation of Dr. H. G. Grant, who resigned in the early summer to become dean of the Medical School of Dalhousie University, Halifax, Nova Scotia.

Dr. B. T. Young,

Duffield, Va., has been elected chairman of the board of directors of the Lee Bank and Trust Company, with principal offices at Pennington Gap, Va. This bank has just been formed by the merger of several Lee County banks.

Dr. Joseph F. Geisinger,

Richmond, Va., was elected president of the Westover Hills Civic Club at its recent meeting.

Dr. Charles P. Cake,

Recently connected with the Herman Kiefer Hospital of Detroit, Mich., is now on the staff of the Metropolitan Life Insurance Company Sanatorium at Mount McGregor, N. Y. Dr. Cake graduated in medicine from the University of Virginia in 1925 and was located for a time in Norfolk, Va.

Dr. C. L. Walton,

Of the class of '31, Medical College of Virginia, who recently completed his internship at the Johnston Memorial Hospital, Abingdon, Va., has located at Glen Alpine, N. C., where he will be associated with Dr. Benj. L. Long in the practice of his profession.

Dr. Robert C. Bryan,

Richmond, Va., announces that on and after September 1, 1932, his office will be located at the Ambassador, 1108 West Franklin Street, this city.

Dr. F. Clyde Bedsaul,

Of the class of '26, Medical College of Virginia, has located at Floyd, Va., where he is associated with Dr. R. M. DeHart in hospital and general practice. Dr. Bedsaul formerly practiced in Grayson County and for the past year has been connected with the Virginia State Department of Health.

The Bone and Radiological Conference

Will be held September 19th-24th, at the Johns Hopkins University, 34th and North Charles Streets, Baltimore, Md., under the auspices of the Surgical Pathological Laboratory of Johns Hopkins Hospital. This Conference is open to all doctors and no formal papers will be read. The conference is under the direction of Dr. Joseph C. Bloodgood and Dr. Charles F. Geschickter.

There having arisen "a need for special studies by a more advanced group, in borderline cases in which diagnosis is difficult, and a need for an exchange of opinion and of case records on those rare conditions in which the clinical experience of any one individual is insufficient," these meetings were begun in September, 1930, and have continued to this time.

Any information relative to attendance upon this Conference may be obtained from Miss Maude E. Walker, Surgical Pathological Laboratory, Johns Hopkins Hospital, Baltimore, Md.

Dr. D. C. Boatwright,

Who has for several years been connected with the medical staff of the Southwestern State Hospital, at Marion, Va., recently resigned his position and is now engaged in private practice in Marion.

Dr. W. L. Varn,

South Hill, Va., has been appointed chairman of the committee on Aims and Objects of the local Rotary Club, of which he is also vice-president.

Dr. A. T. Sheffield,

Formerly of Suffolk, Va., but who has been in Northern Virginia for some time, has located at Sperryville, Va., where he is engaged in general practice.

Dr. Charles H. Patterson,

Who has just completed his internship at the Virginia Baptist Hospital in Lynchburg, Va., has located in that city, with offices at 1111 Church Street, for the general practice of medicine. He is an alumnus of the University of Pennsylvania in the class of '30, and the following year was at City Memorial Hospital, Winston-Salem, N. C.

Dr. Wade H. Carter,

Who practiced for sometime at Osaka, Va., announces that he is now located at Newport, Va.

Dr. Henry S. Plummer,

Rochester, Minn., was elected president of the American Society for the Prevention of Goiter at its annual meeting in Hamilton, Ontario, early this summer.

The Southside Virginia Medical Association

Is to hold its regular quarterly meeting at Piedmont Sanatorium, Burkeville, Va., on September 13th. A large attendance is expected for the interesting program being arranged. Dr. W. W. Wilkinson, La Crosse, is president, and Dr. R. L. Raiford, Franklin, secretary.

Negro Hospital to be Constructed in Richmond.

Construction is to be started very shortly on a Negro hospital and nurses' training school in Richmond, Va. This will be on land adjoining the grounds of the Virginia Union University. The first unit will be a two-story building and basement and, in addition to other departments and necessary facilities, will have private and semiprivate rooms for patients and ward facilities.

Hourly Nursing Service.

The Private Duty Nurses' Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

For information, dial 3-1656. (*Adv.*)

For Sale—

Latest model Spencer microscope. Slightly used. At reasonable price. Address "Mike," care this journal. (*Adv.*)

Wanted—

A young active physician for a rural practice in Northern Virginia, 50 miles from Washington, D. C. Very small town, large territory, much hard work, good income, nothing to sell.

In answering, state age, school and year of graduation, married or single, number of children with ages, religion, native State, whether or not licensed in the State of Virginia. Address Box 222, Warrenton, Va. (*Adv.*)

For Sale—

Established Eye, Ear, Nose and Throat Practice in large Virginia city, with all instruments necessary for this work. Reasonable office rent. Reason—leaving the State. Address No. 357, care this journal. (*Adv.*)

Wanted—

Position as technician in hospital or physician's office. College graduate. Laboratory training at University of Virginia Hospital. Address "Miss R. S.," 1221 Wasena Terrace, Roanoke, Va. (*Adv.*)

Obituary Record

Dr. Edward C. S. Taliaferro,

One of the best known and most beloved physicians in the State, and President of the Medical Society of Virginia in 1921-22, died at Saint Vincent's Hospital, Norfolk, July 28, 1932, of complications following an operation on July 19th, for gangrenous appendicitis. Dr. Taliaferro was fifty-seven years of age and had been identified with the profession of Norfolk for over thirty years, serving first as interne at Saint Vincent's Hospital; then, after practicing in his native County—Gloucester—for two years, and taking a post-graduate course in Vienna, he returned to Norfolk in 1902, and was on the Staff of Saint Vincent's Hospital until his death, serving one term as its president. He was, at the time of his death, also a member of the Staffs of the Norfolk Protestant Hospital and the Memorial Hospital.

He was educated at William and Mary College, following which he studied medicine and graduated at the Medical College of Virginia in 1898. He was a fellow of the American College of Surgeons, and a member of its Board of Governors, and also a member of the House of Delegates of the American Medical Association. He was an ex-president of the Norfolk County Medical Society, the Seaboard Medical Association and the Medical Society of Virginia; was a member of the Phi Beta Kappa (Hon.), Kappa Sigma, Phi Gamma Mu, and Phi Kappa Phi (Hon.) fraternities. He was a 32nd degree Mason, a Knight Templar and a Shriner and was buried with Masonic honors. He was reared in the Episcopal church and, for a number of years prior to his death, served as a vestryman in Saint Paul's church of Norfolk.

He had been specializing in recent years in surgery and gynecology and was considered an authority on the use of radium in the treatment of malignant diseases.

Dr. Taliaferro is survived by his wife—*nee* Miss Alice Serpell, of Norfolk, two daughters and one son.

His burial was at Gloucester, Va., and the funeral at Ware Episcopal Church, that place, was largely attended by people from the surrounding country and from Norfolk.

P. St. L. M.

Resolutions on Death of Dr. Taliaferro.

It is with profound sorrow and the knowledge of a great loss that the Norfolk County Medical Society records the untimely passing of Edward Carrington Stanard Taliaferro, one of its most distinguished and beloved members.

Dr. Taliaferro's professional life was marked by an unusual degree of success and many well deserved honors were conferred upon him. He was a member of the Norfolk County Medical Society, staffs of St. Vincent's, Protestant and Memorial Hospitals, Medical Society of Virginia, American Medical Association, Seaboard Medical Society, the Tri-State Medical Association, and a fellow of the American College of Surgeons. He was also a member of the board of governors of the American College of Surgeons and of the House of Delegates of the American Medical Association. He was an ex-president of the Norfolk County Medical Society, staff of St. Vin-

cent's Hospital, Medical Society of Virginia, and Seaboard Medical Society.

Dr. Taliaferro's attractive, lovable and characteristic personality will continue to live in the thoughts and memories of a vast number who had the privilege of knowing him. It is impossible to adequately express our appreciation of his character. It was of the highest type, combining every quality which is admirable. Therefore, be it

RESOLVED, That in the death of Dr. Edward C. S. Taliaferro, the Norfolk County Medical Society has sustained a lamentable and irreparable loss. Be it further

RESOLVED, That a copy of these resolutions be spread on the minutes of the Society and a copy sent to his family and alo to the VIRGINIA MEDICAL MONTHLY and the local papers.

The sympathy of this Society is extended to his bereaved family.

JULIAN L RAWLS,
W. P. MCDOWELL,
B. R. KENNON,
C. J. ANDREWS,
Committee.

Resolutions adopted by the MEDICAL STAFF OF SAINT VINCENT'S HOSPITAL, on the death of Dr. E. C. S. Taliaferro.

Whereas, It has been the will of our Heavenly Father to call from our midst our beloved co-worker, Dr. Edward C. S. Taliaferro;

Whereas, Dr. Taliaferro has been closely identified with Saint Vincent's Hospital for over thirty years—first, as interne, and later, after taking a post-graduate course in Vienna, as member of the visiting staff, serving at various times on every committee, and once as its president;

Whereas, He has at all times contributed to the success and upkeep of the hospital—being always in the forefront of every move for the advancement of science and high standards of medical ethics;

Whereas, In the death of Dr. Taliaferro the hospital, as well as the whole profession, has lost a genial, sincere friend, a conscientious and able surgeon, and a radium expert. Therefore, be it

RESOLVED, That we, the Visiting Staff of Saint Vincent's Hospital, do hereby wish to express our deep sorrow at the loss of our friend and brother, and extend our sincere sympathy to his family and relations. That a copy of these resolutions be sent to his family; that they be recorded in the minutes of this body, and published in the VIRGINIA MEDICAL MONTHLY and the local paper.

Signed: P. ST. L. MONCURE,
WALTER B. MARTIN,
J. WARREN WHITE.

The members of the NORFOLK PROTESTANT HOSPITAL STAFF, conscious of their own very deep grief, desire to convey to the family their overwhelming sense of loss in the death of their friend and associate, Dr. E. C. S. Taliaferro. The staff also wishes to make a matter of permanent record its appreciation of his outstanding accomplishments in his profession and of his personal virtues and attributes, which entitled him truly to be known as "the Beloved Physician."

His attainments in his chosen profession and the honors with which he was rewarded are too well known to need repetition. His qualities of character, which endeared him to all of his associates and to everyone fortunate enough to know him, will always remain fresh in our memory. With cheerfulness and modesty he went among us. Absolute honesty and sincerity marked him. Charity to everyone possessed him. Whenever controversy arose his counsel was sought. Bitterness was removed through the influence of his magnanimous spirit. His departure has left us with sorrow in our hearts, but the very tragedy of his sudden going has impressed upon us those outstanding qualities of character which made him a man without reproach. Be it, therefore,

RESOLVED by the staff of the Norfolk Protestant Hospital, That these expressions of feelings, together with our deepest sympathy, be sent to the family of Doctor Taliaferro; that they be spread upon the minutes of this organization, and that a copy be furnished the VIRGINIA MEDICAL MONTHLY and the daily press.

Signed:
WALTER B. MARTIN, *Chairman*,
L. FREELAND MAGRUDER,
J. L. RAWLS.

Dr. Mark Wallace Peyser,

For thirty-nine years secretary of the Richmond Academy of Medicine, died July 29th, after having been in failing health for several years. He was a native of Washington, D. C., and sixty-two years of age. Upon completion of his academic education, he studied medicine at the University of Virginia from which he obtained his medical degree in 1890. He was for some years connected with the faculty of the former University College of Medicine of this city and later the Medical College of Virginia. In the past few years he had been associated with Stuart Circle Hospital, this city, as director of its department of physiotherapy. He was a member of and for several years treasurer of the Medical Society of Virginia. Dr. Peyser was a man of many talents. He was a most able physician, the possessor of many friends, and a man who had the strictest regard for professional ethics. He is survived by his widow, Mrs. Eva Ezekiel Peyser, and two brothers.

Resolutions on Death of Dr. Sims.

At a meeting of the Riverside Hospital Staff, Newport News, Va., held June 22, 1932, the following resolutions were unanimously adopted:

Whereas, It has pleased the all-wise Creator to remove from our midst our comrade, Dr. Thomas Jackson Sims, who passed to his reward on June 9, 1932, after an illness of several weeks;

RESOLVED, That in the death of Dr. Sims the profession has lost a valuable member, and the community an outstanding citizen. Dr. Sims upheld the best traditions of his profession; he took a keen interest in the welfare of his patients and at all times he gave to them his best ervice. He was a humanitarian, a Christian soldier, a most useful churchman and was a stepping-stone for humanity to reach nobler heights.

RESOLVED, That these resolutions be spread on the minutes and a copy be sent to the bereaved family.

B. R. GARY,
SAMUEL DOWNING,
W. S. SNEAD,
Committee.

STUART CIRCLE HOSPITAL, Richmond, Va.

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MANFRED CALL, M. D.
Ophthalmology, Oto-Laryngology:
CLIFTON M. MILLER, M. D.
R. H. WRIGHT, M. D.
Physiotherapy:
MARK W. PEYSER, M. D.

General Surgery:
ROBERT C. BRYAN, M. D., F. A. C. S.
STUART N. MICHAUX, M. D., F. A. C. S.
CHARLES R. ROBINS, M. D., F. A. C. S.
Urology:
JOSEPH F. GEISINGER, M. D.
Pathology:
REGENA BECK, M. D.

Obstetrics:
GREER BAUGHMAN, M. D.
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WHY IS THE STATE OF VIRGINIA INTERESTED IN MENTAL HYGIENE?*

WILLIAM F. DREWRY, M. D., Richmond, Va.
Director, Bureau of Mental Hygiene, State Department of Public Welfare.

Census of Mental Patients: The increasing number of Virginia's citizens whose mental disorder or mental deficiency is marked enough to require institutional care constitutes one of the State's most difficult responsibilities, appealing to the highest sense of duty. Patients have been accumulating in hospitals over a long period of time, till on November 1, 1931, the number of mentally sick, mentally deficient and epileptic patients in the five State institutions, including those temporarily absent on visit home, was 10.742. The number under State hospital supervision in 1910 was 4,227, of whom, 387 were on furlough,—an increase of 6,515 in twenty-one years. On July 1, 1932, the institutions were over-crowded with 8,054 patients and 2,557 on furlough, making a total of 10,611. Number of patients actually present in hospitals July 1, 1931, was 7,685, while on July 1, 1932, the number was 8,054, an increase of 369.

Cost of Mental Sickness: The expense for or incident to the care and treatment of patients in the State supported mental institutions for the fiscal year ending June 30, 1931, was two million dollars. Besides this amount, mainly for current maintenance, eight or ten millions of the State's money are tied up in real estate, structures and equipment,—non-tax producing, of course. The average annual per capita cost for maintaining the five State hospitals for the mentally disabled—adults and children—during the fiscal year beginning July 1, 1931, and ending June 30, 1932, was $170.60, which is quite reasonable.

Extra-Institutional Cases: "Aside from those who would be definitely labelled as mental cases, there are many whose minds have a moderate twist to half a turn" is the concise way in which Dr. Ray Lyman Wilbur, the distinguished guest speaker of the conference, describes a certain large class of extra-institutional persons who are constant sources of anxiety to the State as well as to their households and immediate communities. While not technically disordered in mind sufficiently to justify legal commitment, nor sufficiently delinquent to warrant arrest, their mental abnormality and lack of power of adjustment are such as to unfit them for productive or perhaps even peaceful citizenship and happy domestic and social relationships.

Closely allied to this class is another known as the defective-delinquent, in which there is admixture in the individual of traits of criminality and of defective, disordered mentality. In many of these anomalous individuals the abnormal and anti-social behavior occurs about the time of puberty, a period of more or less physiological strain, or somewhere during the period of adolescence. The nervous, emotional and psychic elements predominate in a large proportion of these derelicts and produce tendencies which may materialize into delinquency or actual crime. In the case of many of these criminaloids, as Biarchi calls them, their environment has been most unfavorable and their emotional control and standards of behavior have been neglected from early childhood. At any rate, many of them are so out of harmony with socially accepted behavior that they get an early start towards either the mental hospital or the penal institution. It has been said that a large proportion of adult crime grows out of failure to handle successfully and constructively the juvenile offenders, particularly those with defective mentality or psychotic trends. In the adolescent and the small number of children sent to the penitentiary, frequently abnormal mentality or a frank psychosis has been observed by the penitentiary psychiatrist and the Governor's Advisory Board on Mental Hygiene. Prevention and proper training had doubtless been neglected in childhood. To go further back, this situation is one of the ultimate effects of neglect or delay in

*One of a group of papers presented at the Virginia State Conference on Childhood and Youth, November 23-24, 1931.

dealing intelligently with children before any serious behavior problem has arisen. A distinguished English psychiatrist, Dr. Henderson, recently suggested the kindergarten age as a favorable time to apply mental hygiene.

Mental Disease Starting in Childhood is interesting in connection with mental hygiene. In a study of the causes of mental disorders in New York State, covering a period of several years, it was observed that temperamentally abnormal make-up was regarded as a factor in 57 per cent of the cases. Careful analysis of the social and clinical histories of patients admitted to the Virginia institutions would very probably reveal a similar situation. These observations would seem to bear out the opinion of Dr. William A. White that "most of the patients that come to the mental hospital are people who have been getting ill (mentally) for sometime,—twenty, thirty, forty years; they are end-products of long periods of increasing maladjustment due to personality make-up that started early in life." At any rate these thoughts emphasize the wisdom of beginning in childhood the prevention of mental disorders. Unfavorable heredity, physical disease and handicaps, unwholesome early environment and habits, neglect of appropriate educational, vocational and recreational training, and disturbed emotions are also causative factors of more or less significance.

The Feeble-minded: Throughout the Commonwealth, in homes of citizens of varying social, economic and intellectual levels are thousands of children and young people whose mentality so deviates from the accepted standards classed as normal that they constitute not only potential but actual social, educational, medical and economic problems that challenge the skill and ingenuity of the medical profession and the State. Not only the homes of the poor and degraded, but the homes of some of most cultured families are thus afflicted. Nevertheless, a very large number of these unfortunates have been left unprotected, untrained and, therefore, contribute to illiteracy, sex-immorality, poverty, delinquency and crime. These and deteriorating epileptics and dementia praecox constitute the gravest problems in the field of mental hygiene in childhood and youth.

State's Loss: As every delinquent citizen effects the social integrity and security of the State, so does every mentally afflicted citizen effect its intellectual force. The aggregated loss every year to the State and to individuals incident to mental disorders and deficiency of every type and their consequences in human suffering, failure, and anti-social behavior, is beyond estimation.

Childhood Is the Strategic Time to begin prevention of mental disorders. Following the advent about twenty years ago of the mental hygiene movement came special interest in the welfare of the child, its physical and mental and moral development, which has grown until it is today more in the minds of intelligent socially-minded people than any other thought relative to human welfare. It cannot be too forcibly said that students of mental health regard the early years of life as the fruitful time in which to apply methods of preventing mental disorders and laying the foundation for later adult mental health.

Separate Institutional Provision for psychotic children is a definite need. In the more than 2,500 hundred children and youths studied at the State Mental Hygiene Clinic, a considerable proportion showed such psychotic trends or were mentally disturbed to such an extent that they constituted special problems. The mental disturbance was in many instances the underlying cause, and certainly a contributing factor, in their anti-social behavior. The placement of a few patients of this class in a State hospital, as now organized, for special observation over a temporary period, has not, for obvious reasons, been altogether satisfactory, and the foster home usually available to the Department of Public Welfare has disadvantages in dealing with border-line mental cases. Virginia would take an advanced step in mental hygiene by providing special care for her children having mental disease.

Mental Hygiene Concerns Everybody: In consequence of the foregoing facts and many others that might be advanced relative to the relation of mental health to human happiness and success, one readily sees why every man, woman and child in the State and in the Nation should become deeply interested in mental hygiene. We are constantly being confronted with mental health problems, mental disorders and defects in our own families or our immediate circle of friends that bring to our thoughts, as expressed by Dr. Clarence M. Hincks, General Director, National Committee for Mental Hygiene, that "mental health of the entire population may well prove to be one of the most significant ventures in human welfare."

Suggested Mental Hygiene Program

In face of the situation in Virginia, I would suggest a future mental hygiene program as follows:

Continuation of efforts in informing the medical profession and the general public in the objectives of mental hygiene.

Extension of mental clinics, such as have already been successfully established, for both children and adults so as to embrace the entire State and to include out- and in-patients' clinics in connection with general hospitals.

Increase of trained personnel to investigate and remedy, as far as practicable, environmental conditions that are causative factors in mental disorders in children and juvenile delinquency.

Better preparation of medical students in mental hygiene and psychiatry; training of nurses and social workers for more efficient service with mental cases. Interneship in the State mental hospitals is especially advantageous.

Special institutional provision, preferably a separate institution, for study and treatment of children and youths with mental disorder, apart from adults.

Adequate and efficient institutional provision for the mentally sick and disabled, the feeble-minded and the epileptic to secure the earliest possible treatment.

Research in the causes and prevention of mental disorders, delinquency and crime in the State.

Eugenic sterilization continued on the basis of scientific study of heredity, and prognosis of mental disorders. Without serious delinquency an industrial school is made unnecessary.

Two or more psychiatric pavilions or centers for the diagnosis and treatment of incipient mental disorders are also needed. Their close association with medical schools would for obvious reasons be preferable.

Preparation of teachers in the principles and purposes of mental hygiene. Development of visiting teacher service throughout the State.

Adequate, properly supervised play-life for every child on the basis that there is no better promoter of normal physical and mental growth and of development of favorable personality nor surer deterrent of delinquency than constructive play.

Special training adapted to the retarded and problem school child.

Utilization of the services of specially qualified physicians and social workers in the investigation of the causes and prevention of crime.

Investigation before trial by competent psychiatrists and physicians of the mental status of every person indicted for felony or who is a recidivant and report of their findings given to the court.

326 *State Office Building.*

STATUS OF THE FEEBLE-MINDED AND EPILEPTIC IN VIRGINIA.*

J. H. BELL, M. D., Colony, Va.
Superintendent State Colony for Epileptics and Feeble-minded.

We breed from the best and the worst—some from the best, many from the worst—and indicate with pride our increasing population. We become involved in international conflicts embroiling the civilized races and send the best we have bred to feed the insatiable maw of the War God, and continue to breed some from what is left of the best and many from the worst. The evolutionary progress of the race is, therefore, a more tedious process than if the reverse of the above statement were true.

To one who has given a decade of study to both the theoretical and practical sides of human biology and genetics, prevention through control of potential transmitters of defects offers a more hopeful outlook than any other field of labor. Here in Virginia we are thought of as conservative in the adoption of highly theoretical ideas in public welfare and sociology, and I, for one, think this is as it should be. Better by far to proceed slowly and make fewer mistakes than to advance rapidly and have much to do over or eventually cast aside as impractical. Certainly it may be said of us now that we have a definite program, a definite objective, and the tools within our hands by means of which we may do much towards the reduction of the number of epileptics and defectives in our population: I refer to the process of eugenic sterilization provided for under the Virginia law, and I am pleased to be able to advise you that within the past four years, at one institution alone, we have been able to render procreatively harmless and release from institutional custody approximately 500 persons who were unques-

*One of a group of papers presented at the Virginia State Conference on Childhood and Youth, November 23-24, 1931.

tionably potential transmitters of defects to their offspring.

On several occasions in public addresses I have heard the perfectly innocuous word *sterilization* coupled with the word *mutilation*, referring to the procedure as *sterilization mutilation*, which I should say does give it a rather ominous and dreadful sort of meaning.

We find from the standard dictionaries that *mutilation* is defined as follows: "the act of deprivation of a limb or essential part, or the maiming or disfiguring of a person." I want to assure you that the individual subjected to eugenic sterilization is deprived of no limb or essential part, nor is the individual mutilated or disfigured, unless a small scar may be considered as mutilation, which can hardly be conceded in view of the vast number of our people who are daily having their cutaneous integrity violated for other purposes, and who, I believe, would strongly resent any suggestion that they are being mutilated.

I have rather an unwholesome dread of statistics, but am informed on excellent authority that there is 1 definitely feeble-minded person to every 200, and 1 confirmed epileptic to every 500 in the population of the United States, or a grand total of over 600,000 feeble-minded and 240,000 epileptics. Approximating the population of Virginia at 2,500,000, we would, therefore, have in this State about 12,500 mental deficients and 5,000 epileptics.

To cope with the situation we have at the State Colony for Epileptics and Feeble-minded, for whites only, approximately 1,000 beds, and at the Central State Hospital, at Petersburg, for colored epileptics and feeble-minded, approximately 340 beds.

It would appear, therefore, that we are much under a reasonable capacity for the effective handling of the problem, and my suggestion here would be that, instead of continuing to enlarge these institutions indefinitely, the State, when it is able to do so, create a separate institution for epileptics,—the problems of administration, research, and rehabilitation, being much complicated by the attempt to handle these two widely divergent types of cases in the same institution.

In recent years, we have been receiving at the State Colony for Epileptics and Feeble-minded a steadily increasing number of children from ten to sixteen years of age. Quite a few of these may be regarded as border-line or dull-normal, but with marked behavior difficulties which have rendered them more or less incorrigible in their homes and communities. There are several factors which may cooperate to bring about this situation: primarily, there is usually the common factor of heredity, and associated with this, a lack of judgment or understanding on the part of the parents, many of whom are also obviously defective or neurotic. The defective traits in the child which bring about the conflict receive strong parental emphasis, and, instead of having a tendency to be submerged by the many more normal trends, are exaggerated to the point where control is finally lost and the child must be institutionalized for its own welfare and that of the family.

I have seen many cases come to the institution with exaggerated complexes of various sorts and lose their peculiar sensitiveness, and become within their limitations more or less normal in their reactions and outlook upon life. I do not mean you shall infer from this that we can take a congenitally defective, subnormal person and make an average normal individual out of him. But within his circumscribed area of intelligence, his normal reactions may be increased and his abnormal or defective ones minimized.

I have been requested by Mr. H. M. McManaway, Chairman of the Committee on Special Education, to devote a part of my time to the discussion of the education of defectives. I am strongly of the opinion that dull-normals and border-lines, unless they are definitely psychopathic, should better be trained outside of institutional walls. I feel that each graded school should have as a part of its curriculum well-planned courses in manual training and domestic arts, with adequate equipment for instruction. Such training should proceed coincidentally with the literary studies and should have equal value and importance. As to the education of those who are frankly defective, I feel that their training should be largely manual. The industries for which the males are best fitted are agriculture, animal husbandry, rough carpentry, and mechanics' helpers: and the females may be successfully trained in domestic duties, and the simpler types of factory work.

The three R's should not be wholly neglected, and if they can be taught to read, write, and do simple sums, within a reasonable period of

time, they are entitled to this advantage. The manual side of their education, however, should be emphasized, as it is through the work of their hands, together with such native intelligence as they possess that they may ever hope to become self-supporting citizens.

In a less complicated civilization, it is conceivable that many of these persons would have perhaps been able to have gotten by, but at this time, without special training, their limited capabilities fall far short of adequately meeting their economic needs.

Those of you who have had experience in dealing with the so-called incorrigible defective realize the utter futility of ordinary disciplinary methods; the discipline of the wisest is often hopelessly inadequate and misunderstood. What can we do for this class of young boys and girls? Certainly their mental attitude must undergo a change before anything can be done. And even under the mildest sort of restriction this often seems most difficult. Occasionally one will change his mental outlook and demeanor almost spontaneously, but this more frequently is due to the clearing up of a mild psychotic condition over which we had but little if any control. Many are skillful with their hands, and many take a commendable interest in sorts of work for which they have a liking. If they could be employed on selected tasks, in pleasant, well-lighted factories, under mild supervision, and with as few restrictions as possible, do you not think it might help them to get more *en rapport* with Society? Certainly they are a disturbing factor in every institution, and their influence on the more social and benign types is destructive. No one wants to keep them. They are complained of at home and abroad. Perhaps they could do better segregated to themselves, with facilities for constructive work, amid pleasant and attractive surroundings, and with very simple disciplinary measures.

I have visualized a Colony of such adult persons, self-sustaining in all of its aspects, with family life—exclusive of offspring—and with limited self-government.

May I leave you with this idea, which may perhaps be more Utopian than practical; yet it is something to think about?

There are, in any well-organized and comprehensive plan for the control and limitation of defectives, seven lines of endeavor that we must think of as basic and elemental. They are as follows:

First, *identification* and *registration;* second, *institutionalization* or *community control;* third, *training* and *rehabilitation;* fourth, *eugenic sterilization* where the lines are defective; fifth, *parole* or *discharge*, with after-care where necessary; sixth, an adequate *follow-up system* to assist the patient in his readjustment to community life; seventh, *appropriate legislation* prohibiting marriage between feeble-minded, epileptic, or insane persons prior to eugenic sterilization.

Commendable progress has been made on some of the points in such a program as outlined. For instance, the Department of Public Welfare, through its Bureau of Mental Hygiene and its field workers, is doing much towards identification and registration; institutionalization is limited only by a lack of facilities, as there is always a waiting list of suitable and appropriate cases; intra- and extra-institutional training are hampered by lack of suitable equipment and training forces; eugenic sterilization is being carried on in the institutions as rapidly as is consistent with known facts in biology and eugenics; parole and discharge are being utilized extensively, but lack proper and adequate after-care; no very comprehensive or well-organized follow-up system, insofar as I know, is being carried out by the State Hospital system; the present marriage laws, while probably entirely appropriate for past generations and in keeping with the status of the social knowledge of their day, are totally inadequate to meet the present situation, and should be amended and so revised as to require a clean bill of health, both mental and physical, from the contracting parties—that is, they should be required to be free from the social diseases and be of approximately normal mental condition (not obviously insane, feeble-minded, or epileptic) prior to the issuance of a marriage license.

HOW PHYSICAL HANDICAPS PRODUCE MENTAL PROBLEMS.*

FRANK H. REDWOOD, M. D., Norfolk, Va.

The role that physical handicaps play in the production of mental problems is brought about in two ways, viz., the somatic disturbances themselves and the reaction to these physical disorders.

As an example of the latter phase of the problem is a very bright boy of seventeen years,

*One of a group of papers presented at the Virginia State Conference on Childhood and Youth, November 23-24, 1931.

who had a severe infantile paralysis when younger that left him partly disabled in his lower limbs. He cannot dance, he will not swim, he is unable to take part in any athletics and, as a consequence, he has developed an inferiority complex. He compensates by running away from home and indulging in frequent alcoholic excesses. In this connection I may mention any physical deformity, such as a prominent birth mark, as entering into the development of mental problems. Stuttering frequently is the basis for the beginning of a shut in personality in older children.

The alarming increase in head injuries caused chiefly from automobile accidents is already a serious situation to those who believe that physical disorders have a bearing on personality changes. A blow on the head sufficient to cause a fracture will, in all probability, produce a hemorrhagic encephalitis or other brain changes that later on will be a potential factor at least in the causation of conduct or other mental disorders. These children, in my own experience, are frequently nervous, have headache, are listless, and become problems in the direction of abnormal conduct. Proper treatment during the acute stage and for months afterward may alleviate, to a large extent, this factor. I would, therefore, urge all physicians who see these accidents, to consider each one as a serious condition, and to urge all parents of these children to obey their doctors' orders in detail, and especially to keep them quiet in bed for a sufficient length of time. If this is done, it is possible that many mental abnormalities will be prevented.

There are many toxic conditions and infections that heretofore have not been given sufficient thought as a factor in the production of mental changes. Cerebral accidents from paroxysms of coughing in whooping cough are not unknown. Bleeding within the cranial cavity in purpura hemorrhagica followed by epilepsy and general backwardness is a rare condition, but has occurred. Scarlet fever, and especially its bearing on middle ear affections with deafness, partial or complete, is important.

Tuberculosis, which frequently is not diagnosed, may be the cause of the child's sluggishness. I am told that the physical examination of a young child is not satisfactory, but a properly interpreted X-ray plate is most helpful in the diagnosis of tuberculosis. Intestinal parasites with the accompanying anemia are often found in school children who are backward but who have average intelligence quotients, and it is reasonable to suppose that these foreign hosts are concerned in their backwardness. Encephalitis from measles, lethargic encephalitis and severe cases of meningitis might well be mentioned in this connection. I understand from Dr. Beverley Tucker that juvenile diabetes has been an important factor in several of his cases. Syphilis *per se* is probably not so important a factor in causing mental deficiency as was thought at one time. Dayton reports only 5.4 per cent of mental deficiency from a total of 9,183 congenital syphilitics examined. But every physician sees children who are generally below par, underweight, backward mentally, and who are possibly showing abnormal mental reactions, but whose Wassermann tests are negative, although the parents are known syphilitics. I have had the feeling that syphilis was the basis for the mental abnormality, even in spite of the negative blood and spinal fluid Wassermann.

It is admitted by all that ductless glands have an important bearing on the general make-up of the individual. There is a great deal that is unknown, but rapid progress is being made and new facts are constantly being discovered. Cretinism has, of course, been known for years, but we see very few true cretins. There is a type of case, however, in which the child is restless, irritable, underweight and mentally backward which fits into the clinical diagnosis of a thyroid-parathyroid-calcium deficiency case. The basal metabolic rate, of course, is impossible at this age, but if one will X-ray the wrist joints, the development of the carpal bones gives very definite information of thyroid hypofunction. I have a number of these cases under my care and they all make definite and rather marked progress. There is unquestionably a distinct relation between the function of the pituitary and personality make-up of the individual, and possibly this gland has considerable to do with one's emotional life as well. In adults there are certainly pituitary types both of hyperfunction and hypofunction which can be seen almost at a glance, but in children these changes are not so plain, although they are recognized by one familiar with the picture. We have all seen the girl-boy and the boy-girl type. Many of these cases can be much benefited by early treatment, but if allowed to go on to various degrees of sex reversion, they make most unhappy citizens. I have under treatment at

present a large, obese woman of 30 years who has a heavy masculine voice, as well as a beard, and has to shave regularly. Some of these cases adjust themselves in various ways, but many of them live quite abnormal lives and are generally miserable.

Many children are laggards in their classes on account of errors of refraction and sometimes partial deafness. I have seen a few of these children who were thought to be mentally backward, but a careful refraction disclosed the fact that they were having marked difficulty with their eye-sight, and proper glasses enabled them to keep up with their classes.

There are some psychiatrists who definitely separate the mental from the physical. I am of the firm opinion that this cannot always be done, when we consider physical handicaps in connection with conduct disorders, personality changes and many other mental abnormalities.

503 *Medical Arts Building.*

THE VALUE OF THE EXTRACT OF WATERMELON SEED IN THE TREATMENT OF ARTERIAL HYPERTENSION.*

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Since the introduction of the extract of watermelon seed (cucurbita citrullus) by Barksdale,[1] in 1926, several reports have appeared in the literature on its value in the treatment of hypertension. As with the majority of therapeutic agents used in the treatment of this condition, no consistent results have been obtained from the use of cucurbocitrin, which is marketed under the trade name "citrin." Wilkinson[2] reported that fifty-six (82 per cent) of sixty-eight patients with hypertensive cardiovascular disease treated with citrin "showed a sufficient reduction of the arterial tension to be of clinical importance." Aulthausen and Kerr[3] found that in a series of forty cases, 73 per cent showed an appreciable reduction in the pressure, using as their criterion of successful treatment a reduction of 20 mm. or more of mercury in the systolic with a corresponding reduction in the diastolic. They stated that 82 per cent were partially or completely relieved of symptoms. Gargill and Rudy[4] found that 24 per cent of their series of twenty-nine patients showed a satisfactory reduction, 25 mm. in the systolic and 10 mm. in the diastolic. In a previous study[5] we found that citrin brought about a minimum reduction of 20/5 mm. in the pressure with alleviation of symptoms in 25 per cent of the cases.

Since a drug that is capable of decreasing arteriolar resistance is greatly needed in the treatment of many patients with hypertension, we felt that citrin should be given a more thorough trial; consequently, we have employed it in another series of patients. As in the previous study, no attempt was made to select cases other than to obtain those with permanently elevated blood pressures. This somewhat miscellaneous group consists of twenty-two patients, nearly all of whom were ambulatory. Thirteen of the patients were women and nine were men. Their ages ranged between twenty-three and eighty-two years; two were under forty; two were between forty and fifty; seven betwen fifty and sixty; eight between sixty and seventy, and one was eighty-two years of age.

A complete history was taken, and a general physical examination, including an examination of the ocular fundi, was made in each case. In addition, a study of renal function was made by means of the dilution and concentration tests, the phenolsulphonephthalein excretion test, and an estimation of the blood urea, although neither of the last two tests was made in two cases. Chemical and microscopic examinations of the urine were made in all cases. Electrocardiograms and teleoroentgenograms were made of those patients who were having symptoms and signs of disturbed cardiac function.

Nearly all of the patients had been treated at intervals previously for hypertension, either by a restricted diet, or by sedative and vasodilator drugs, although none of them had received any treatment for several months before taking citrin. Eighteen patients were under our observation for a period of time varying from five weeks to twelve months before beginning this treatment. Four cases (Nos. 7, 10, 13 and 20), referred by other physicians, were hospitalized for two or three weeks because their symptoms suggested severe disturbances in the cerebral circulation. These patients had been carefully studied by their physicians, who had recorded the blood pressure readings at intervals of ten to fourteen days at approximately the same time of day and after a period of rest of fifteen minutes. We accepted their measurements as control

*From the Medical Department of Lewis-Gale Hospital.

readings for these patients, and four days later we gave them citrin. They continued to take the drug after leaving the hospital, and it was through the courtesy of their physicians that we were able to follow them through their periods of treatment.

Blood pressure readings of these four patients were made daily before citrin was given, but in all other patients the readings were made at intervals of one week and as nearly on the same hour of the day as possible after the patient had rested comfortably for fifteen minutes with the sphygmomanometer (Baumanometer) applied to the arm. The third reading at each sitting was recorded and the average of these was considered the average blood pressure.

Another control procedure carried out in fourteen cases was the determination of the effect on the blood pressure of the inhalation of amyl nitrite, as suggested by Steiglitz.[6] No significant reduction was observed in the pressure of eight patients who were given this test. Two patients, one with fairly well advanced sclerosis in both the brachial and retinal arteries, and the other without any demonstrable sclerosis, exhibited a drop in the pressure to the normal, followed quickly by a rise to the initial level. Neither of these patients responded to citrin after taking it over a long period of time. The other four patients who responded to the test responded also to citrin.

The Period of Treatment

Citrin was administered orally in capsules containing 100 mgs. of the active principle, the glucoside. Eleven patients took 300 to 400 mgs. daily and twelve took larger doses, 600 to 800 mgs., daily throughout the greater part of the period of treatment. Blood pressure readings of twelve patients were made twenty-five, thirty-five and forty-five minutes after the first dose was taken. We also recorded the readings of these patients on five consecutive days after beginning the treatment. All other readings were made at intervals of one week, and notes were made of any change in symptoms.

Results of Citrin Therapy

No immediate reductions in the pressure were observed in any of the patients on whom readings were made after the first dose. Thus we did not confirm the observation of Aulthausen and Kerr[3] that "Following a single oral dose of cucurbocitrin there is usually in hypertension cases a fall of the systolic and diastolic pressure beginning about fifteen minutes after the administration of the drug."

Nine of the twenty-two patients showed a reduction of 30 mm. or more of mercury in the systolic pressure and 10 mm. or more in the diastolic after they had taken citrin over a long period of time. The greatest reduction in the systolic was noted in Cases 22 and 23, in whom a lowering of 40 mm. occurred, while the greatest reduction in the diastolic, 16 mm., occurred in Case 8.

Four of the patients, in whom a reduction of 30/10 mm. of mercury was observed, experienced complete relief from their symptoms. None of them, however, obtained much relief from symptoms until the maximum reduction had been observed in their blood pressure, usually two weeks or more after they began taking citrin. Of the remaining five patients who exhibited the same degree of reduction in pressure, two had no symptoms before taking citrin, and three had none that could be attributed to hypertension. Two patients whose pressures were not reduced reported relief from their symptoms. In the remaining cases the relief from symptoms was almost negligible.

The duration of the effect of citrin varied from three weeks to five months in nine patients. It lasted three weeks in four patients; from four to eight weeks in three; four months in one, and five months in another. The results of the treatment are shown in Table I.

Results of Subsequent Treatment with Citrin

Eighteen patients were subjected to periods of subsequent treatment with citrin particularly for the purpose of determining whether those who had previously responded might develop tolerance to it. Eight of the patients, who had been benefited by the drug, took it again when the effect of the previous treatment had disappeared, as evidenced by a rise in the blood pressure to the original level. The same dose, 100 mgs. three or four times a day, was again effective in reducing the pressure. It is interesting to note also that these patients, with one exception, responded a little more quickly to the second and third treatments, but the duration of the effect of subsequent treatments was the same as the first. Those patients who failed to respond to citrin the first time it was given showed no response later.

TABLE I

Analysis of Twenty-Two Patients Treated with Citrin

Case	Sex	Age	Duration of hypertension as known by patients	Heart enlarged	Kidney function, impaired	Changes in large arteries.	Changes in retinal arteries	Period of observation before treatment with citrin	Effect of amyl nitrite on blood pressure	Average blood pressure before treatment with citrin	Average blood pressure after treatment	Reduction by citrin	Symptomatic relief	Daily dose of citrin, mgs.	Number of days of treatment	Duration of effect of citrin	Number of subsequent treatments	Effect of subsequent treatments
1	F	53	3 yrs.	Sl.	Normal for age	Sl.	Sl.	2½ mo.	Returned to normal	192/94	162/80	30/14	Complete	300 15 days 400 39 days	54	3 wks.	2	Satisfactory
2	M	57	3 yrs.	Mod.	Mod.	Mod.	Mod.	3 mo.	Returned to normal	188/110	174/105	14/5	Complete	600 40 days 800 14 days	54	0	3	Not any
3	F	55	8 yrs.	Sl.	Normal for age	Mod.	Mod.	4 mo.	Slight	188/110	176/108	12/2	Partial	600 40 days	40	0	3	Not any
4	M	61	1 yr.	Mod.	Mod.	Mod.	Sl.	3 mo.	.....	190/110	160/98	30/12	Complete	400 14 days 300 18 days 400 30 days	62	4 wks.	3	Satisfactory
5	F	51	10 yrs.	Mod.	No	No	Mod.	8 mo.	Slight	204/112	194/112	10/0	Not any	600 14 days 800 45 days	59	0	3	Not any
6	F	47	4 yrs.	Sl.	No	No	Sl.	2 mo.	Returned to normal	190/110	160/96	30/14	No symptoms	400	30	3 wks.	1	Satisfactory
7	M	57	4-5 yrs.	Marked	Mod.	Mod.	Marked	4 days	Slight	202/116	190/114	12/2	Not any	600 18 days 800 47 days	65	0	0	.....
8	M	73	2 yrs.	Mod.	Mod.	Mod.	Sl.	3 mo.	.....	194/96	160/80	34/16	Complete	400 14 days 300 20 days	34	2 mo.	2	Satisfactory
9	F	64	Unknown	Sl.	Mod.	Mod.	Mod.	3 mo.	.....	186/104	170/96	16/8	Not any	300 15 days 600 18 days	33	0	2	Not any
10	M	67	4 yrs.	Marked	Mod.	Mod.	Mod.	4 days	Slight	216/112	208/108	8/4	Not any	800	36	0	1	Not any
11	F	64	Unknown	Mod.	Normal for age	Sl.	Mod.	7 wks.	.....	190/106	180/102	10/4	Not any	600 14 days 800 10 days	24	0	0	.....

TABLE I—Continued

Case	Sex	Age	Duration of hypertension as known by patients	Heart enlarged	Kidney function, impaired	Changes in large arteries.	Changes in retinal arteries	Period of observation before treatment with citrin	Effect of amyl nitrite on blood pressure	Average blood pressure before treatment with citrin	Average blood pressure after treatment	Reduction by citrin	Symptomatic relief	Daily dose of citrin, mgs.	Number of days of treatment	Duration of effect of citrin	Number of subsequent treatments	Effect of subsequent treatments
12	M	70	4 yrs.	Mod.	Mod.	Mod.	Mod.	4 days	.....	196/104	180/98	16/6	Not any	600	70	0	0	.....
13	F	63	12 yrs.	Mod.	Normal for age	Sl.	Mod.	2 mo.	Slight	210/110	196/110	14/0	Not any	600 20 days 800 40 days	60	0	1	Not any
14	F	54	5 yrs.	Sl.	Normal for age	Sl.	Sl.	10 mo.	Returned to normal	182/106	148/96	34/10	No symptoms	300	19	3 wks.	2	Satisfactory
15	F	23	Unknown	No	No	None	None	8 mo.	Returned to normal	144/94	114/82	30/12	No symptoms	300	21	6 wks.	2	Satisfactory
16	F	53	3 yrs.	Sl.	Normal for age	Sl.	Sl.	5 wks.	.....	188/102	150/90	38/12	No symptoms	400 14 days 300 7 days	21	3 wks.	2	Satisfactory
17	M	66	2½ yrs.	Mod.	Mod.	Mod.	Marked	5 wks.	Slight	206/114	198/112	8/2	Complete	600 14 days 800 30 days	44	0	1	Not any
18	M	64	10 yrs.	Mod.	Mod.	Mod.	Mod.	7 wks.	Slight	214/128	202/126	12/2	Not any	800 35 days 600 30 days	65	0	1	Not any
19	F	36	5 mo.	No	No	None	None	4 days	Returned to normal	174/104	168/102	6/2	Not any	600 21 days 800 28 days	49	0	1	Not any
20	F	49	1 yr.	Mod.	No	Sl.	Sl.	4 mo.	Sl.	180/100	168/96	12/4	Not any	400 14 days 600 21 days 800 21 days	56	0	1	Not any
*21	F	77	6 yrs.	Marked	Mod.	Marked	Mod.	1 yr.	.....	196/60	156/48	40/12	Complete	400	14	5 mo.	1	Satisfactory
*22	M	82	3 yrs.	Marked	Mod.	Marked	Mod.	1 yr.	.....	190/80	150/70	40/10	Partial	300	30	4 mo.	0	.....

*Included through the courtesy of Dr. R. L. Seward who made the observations in the same manner as they were made by myself in the other cases.

These results of the treatment are shown also in Table I.

No untoward symptoms, either from a definite lowering of the blood pressure, or from toxic action of the drug, were observed in any of the patients. Frequent urinalyses revealed no evidences of renal irritation by the larger doses. It is interesting to note also that none of the patients developed signs of tolerance to the drug.

Discussion

A satisfactory reduction in the blood pressure occurred in nine of the twenty-two patients treated with citrin. Since one of the characteristic features of blood pressure, both in the normal and in the hypertensive individual, is its spontaneous variability, the question arises: What constitutes a satisfactory reduction?

The tendency to spontaneous changes of

TABLE II.

Variations in the Blood Pressure of Twenty-three Patients Treated with Citrin

CASE	Before Treatment				During Treatment				After Treatment			
	Maximum		Minimum		Maximum		Minimum		Maximum		Minimum	
	Syst.	Diast	Syst.	Diast	Syst.	Diast.	Syst.	Diast.	Syst.	Diast.	Syst.	Diast.
1	212	98	180	90	198	96	160	78	176	84	160	78
2	194	112	180	108	188	114	168	102	180	102	168	102
3	196	112	160	108	190	112	160	108	180	112	160	108
4	196	112	184	108	190	110	154	92	168	98	154	92
5	230	118	190	110	200	122	170	106	190	116	170	110
6	206	114	186	108	182	100	150	90	170	98	152	92
7	220	120	190	114	210	116	174	116	206	116	174	114
8	210	100	190	86	180	80	150	66	170	74	160	68
9	196	104	180	98	186	102	158	94	190	100	166	94
10	238	120	210	110	224	112	190	98	220	112	190	98
11	240	120	196	110	210	108	170	98	202	106	172	96
12	208	106	194	102	184	100	160	90	180	98	160	92
13	204	116	192	104	194	108	168	92	(died while on treatment)			
14	232	118	196	110	220	120	194	110	236	114	194	110
15	198	112	174	102	162	98	140	94	158	98	140	92
16	160	96	140	92	130	90	110	80	126	84	104	80
17	210	110	180	98	180	100	134	86	168	94	132	86
18	230	118	190	112	216	118	188	108	228	118	186	108
19	226	140	190	126	218	134	194	126	210	134	196	126
20	198	120	168	98	188	112	158	98	178	110	158	98
21	186	100	178	96	184	100	166	90	180	98	168	92
22	210	68	190	56	170	60	135	40	168	60	140	40
23	204	88	184	70	190	80	135	70	160	70	135	70

blood pressure in essential hypertension has been studied,[7, 8, 9] and noted as an early and characteristic feature of that affection.[10] Wood[11] has observed marked fluctuations in the blood pressures in hypertensive patients with and without renal impairment. Mosenthal and Short,[12] and also Sigler,[13] have shown that the tendency of the blood pressure to fluctuate is greater in hypertensive individuals than in those with normal pressure under the same conditions. The variations in the blood pressure of our patients (Table II) are as striking as those reported by the authors just mentioned. This tendency of the blood pressure to fluctuate must be borne in mind, and it requires conservatism in evaluating the results obtained from the use of any drug in the treatment of hypertension.

In appraising the value of citrin, we adopted the following criteria: (1) A careful study of each patient, which included a record of the variations in blood pressure; (2) A minimum reduction of 30 mm. of mercury in the systolic pressure and of 10 mm. in the diastolic; and (3) Definite symptomatic relief. We realize that variations of 30/10 mm. of mercury occur frequently in the blood pressure, and also that a reduction of that amount or more sometimes occurs spontaneously. We realize, too, that symptomatic relief may be due to other factors difficult to rule out. Still we feel that if a lowering of the pressure and relief from symptoms persist for an appreciable length of time after the use of the drug, they may be attributed to it.

Since it is known that the lowering of blood pressure may be influenced by the age and sex of the patient, the body weight, the duration of hypertension, the extent of arteriosclerosis, renal impairment, and the mental attitude, we have analyzed separately the bearing of each of these on the results obtained with citrin in this group of cases.

Age seems not to have had any bearing on the results. The average age of the patients who were benefited was 58.9 years, the same as the average age of those who were not benefited. It was the same also as the average age of the entire group of patients. Sex likewise had no appreciable influence on the results, either on the lowering of the pressure or relieving the symptoms.

We failed to find that body weight had any influence on the results obtained with citrin. The patients were weighed with their clothes and shoes on, and their normal weight calculated on the basis of age, sex and height, according to the tables given by Gray and Gray.[14] The difference in the weight of the patients in the two groups seemed insignificant, especially as 20 per cent above or below the average weight is regarded as a safe variation. The weight of two patients who responded was thirty and thirty-five pounds, respectively above the 20 per cent allowed them, while in the other group one was thirty pounds over-weight and one was twenty-eight pounds under-weight. The weight of each patient in this series remained constant during the periods of treatment.

Two factors of great importance affecting the outcome of citrin therapy, as that of any form of therapy in this condition, are the duration of hypertension and the extent of arteriolar sclerosis. The patients whose blood pressures were lowered gave a history of having had hypertension for seven years or less, the average duration being three and one-half years, while the average duration in the patients who were not benefited was a little more than six years. It may be stated also that the patients who responded to citrin had a mild or moderate degree of hypertension; the average systolic pressure scarcely exceeded 200 mm. of mercury, and the average diastolic did not exceed 110 mm. Moreover, one-half of these patients had hypertension chiefly of the systolic variety.

The amount of sclerosis and particularly its site influenced more than any other factor the results obtained in this series of cases. It is well known that when sclerosis has developed, it is usually found to be more extensive either in the large arteries or in the small ones, although sometimes it apparently involves both the large arteries and the small arteries to the same extent. It is well known, also, that when the sclerosis predominates in the large arteries the blood pressure, which is usually slightly or moderately elevated, is more readily lowered. The patients in whom a satisfactory lowering of the blood pressure occurred had sclerosis mainly in the large arteries, with relatively little involvement of the small ones as judged by the appearance of the retinal arteries. On the other hand, the patients who did not respond to the treatment had a greater amount of sclerosis in the retinal than in the palpable arteries, although one of these had

no demonstrable sclerosis in either the large or the small arteries.

Contrary to expectations, the impairment of renal function did not influence consistently the results obtained with citrin. Eleven patients had definite evidences of nephritis, as nocturia, low specific gravity of the urine, costs, diminished phenolsulphonephthalein excretion and increased blood urea. Citrin was effective in lowering the blood pressure in four of these patients, while in seven it was ineffective. Diminished variations in the specific gravity of the urine without other evidences of impaired renal function were observed in two patients who responded to the treatment, and in four whose blood pressures remain unchanged.

The mental attitude of the patients appeared to have little, if any, influence on the results obtained in this series. No significant reduction of the blood pressure was observed in any of those who did not respond, even when they knew they were taking a new drug. Two of those who responded worried to some extent about high blood pressure, and their systolic pressures were often 20 to 30 mm. higher when taken immediately after they entered the office than it was after resting fifteen minutes. In each instance, however, a satisfactory reduction of their blood pressures was accomplished by three different periods of treatment before they knew that they had taken a new drug. The other patients who responded were phlegmatic in temperament; they did not worry about high blood pressure, and they did not seem to be susceptible to suggestion.

Summary

1. Citrin given orally in doses of 100 mgs. three or four times daily caused a reduction of 30 mm. of mercury in the systolic pressure and 10 mm. in the diastolic in nine (41 per cent) of a group of twenty-two patients with hypertension. This effect was observed only in the patients with mild and moderate degrees of hypertension, and after they had taken the drug for a period of time varying from twelve days to two months.

2. Four of the patients whose blood pressures were lowered had symptoms that were attributed to hypertension. They obtained relief from their symptoms, but it was not complete until a minimum reduction in the blood pressure had occurred.

3. The duration of the effect of citrin varied from three weeks to five and one-half months in nine of these patients who continued under observation. When it became necessary to prescribe citrin again, the same doses were as effective as the first in reducing the blood pressure.

4. The age and sex of the patient, the body weight, the impairment of renal function, and the mental attitude of the patients seemed not to influence the results obtained with citrin in this group of patients. On the other hand, the duration of hypertension, and the site of sclerosis were important factors in the results obtained. No satisfactory reduction in the blood pressure was observed in those patients who had much sclerosis in the small arteries.

5. No toxic effects from citrin when taken over a prolonged period of time were observed. None of the patients in whom the drug acted favorably developed signs of tolerance to it.

We wish to express our thanks to the Table Rock Laboratories, Greenville, S. C., for supplying the drug for this study.

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DIETETICS IN DENTISTRY AND ITS RELATION TO MEDICINE.*

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I deem it not only a privilege and pleasure, but a distinct honor to be allowed a place on today's program. The impulse that prompts you to invite one from outside your particular field to participate in the discussion of a correlated subject is truly indicative of a broadening fraternalism, and the acknowledgment of that feeling of interdependence which I am sure, when properly shared, will promote the welfare of man.

For fear that the title of this paper may seem presumptuous to some, I wish it to be thoroughly understood that I am making no effort to step out of the field of dentistry and into that of medicine. Having been interested in dietetics for the past fifteen or more years I have during that time collected, from time to time, books, pamphlets, articles from journals and through observation, quite a bit of information bearing on this subject. Therefore, in this presentation I have merely tried to correlate many facts from the writings of a variety of investigators. In this paper I not only quote from numerous writers, but many times am using word for word as written by the author.

To stop to note references would take too much time, so I am just using the subject matter in the hope that it may prove at least interesting.

"The subject of food combinations is by no means a new one. The Jews, as well as many other of the early races, had formulated for them definite laws regarding the selection of food as well as restrictions concerning the eating of certain kinds of food with other varieties of nutriment. These laws were founded upon religious observances; the basis for these rules of eating must have been the fruit of the keen observation of priests and others of their kind entrusted more or less with the morals and the health of the community."

Says N. Philip Norman, M. D., in an article appearing in *International Clinics:*

"The more careful observer in the medical clinics of the large cities of America cannot fail to be impressed with the history of the immigrant Jew who, before migrating to this country and while living in strict accordance with the Kosher law, has been a rather healthy specimen; but when arriving in America and not observing so strictly the Kosher law, indulging himself in the many varieties of processed food that almost seem to be the pride of America, he shortly develops digestive disorders that the gastro-enterologist is called upon to correct. This is also true of other races, as the Italian and the Irish, whose native fare differs widely from that consumed in this country."

Within recent years the question of food combinations has been advanced by lay writers and a few physicians. Their reasons apparently were founded upon theory, observation and fad. While they contain a lot of truth, at the same time there was not a scientific foundation for constricting the combining of certain foods with other foods, and for this reason these ideas have never gained popular favor amongst the medical profession.

Many years ago, the subject of nutrition suffered perhaps its severest blow when the balanced meal was conceived. From what was known at that time, it was concluded that the three essentials for every meal were a carbohydrate, a protein, and a fat. Further observation and some research finally proved that in addition to these three elements, a fourth factor was needed,—that fourth factor being the mineral element. We are indebted to this conception for the present-day system of eating in which we consume three meals a day, made up mostly of fats, proteins, and carbohydrates. The mineral constituents of the meal of today are very seriously impaired by the processing or refining to which a great part of our food is now subjected in the course of manufacture.

In recent years, the necessity of the so-called food factors has come to the fore, and it is strange that we have been blind for so long a time to their need and to their value as part of the nutritional scheme. Several years ago, Funk brought out the vitamin theory, and medicine, with its traditional conservativeness, delayed the recognition of this important discovery for too many years. Today, while we do not positively know what vitamins are, at least we are beginning to admit that their pres-

*Read before the Southside Virginia Medical Association at Petersburg, Va., March 8, 1932.

ence is not only desirable but necessary for proper nutrition. Fortunately for the public, most of the work that has been done on nutrition has been done by non-medical rather than medical men, and for this reason an avenue for publicity has been given to which the conservative medical man never would have consented. This, however, has possibly warped the ideas of the lay public concerning nutrition, because fantastic theorists have tried to foster the popular idea that at some day in the future we would be able to "can" nutrition, even put it up in capsules, so that we would not have to be bothered any longer with the necessity of eating.

The medicine of the future is going to be concerned primarily with the nutrition of the individual; not after he has developed disease, but before he is born. Upon proper nutrition of the present-day generation depends the constitutional integrity of the generation of tomorrow. And when we, as teachers of the community, will educate our patients to the need of abolishing and preventing from being manufactured and sold such products as candy, cake, pastries, breakfast cereals, polished rice, refined sugar, bolted flour, canned meats, etc., in the same manner in which we have taught them the necessity of quarantine in a communicable disease and the necessity for clean teeth in regard to systemic disease, then we will have accomplished the master-stroke of preventive medicine. But so long as we assume a derisive attitude towards it and hide behind the blanket phrase, "Oh, the human race is adapting itself to these new food substitutions," which is just a blanket to cloak our prejudice, our ignorance, and our indifference to the progress of the most vital therapeutic aid to medicine, then so long will we have to admit our failure in decreasing the amount of chronic diseases that are steadily increasing despite our better knowledge concerning their detection and treatment. Statistics from well-organized institutions are proving to us each day that chronic degenerative types of diseases are increasing and so many of us sit idly back and explain the whole thing is due to the stress and strain of modern life. The strain and stress of life is less today than it has ever been in the history of the world. We have more money, more conveniences, more devices for making life easy than ever before. And there is no class or set of living things in the world today that has made its adjustments to its environment as well as civilized peoples, and this is especially true of Americans.

Fundamentals for Planning Meals

Recent researches have shown that the acid-forming foods, contrary to prevalent conception, are the meats, starches (except the white potato), prunes, plums, cranberries and rhubarb. The alkali or neutralizing types of foods are raw fruits, raw and cooked non-starchy vegetables and milk. The neutral foods are fats and sugars; yet these, while neutral, may intensify the acid-forming properties of the acid-forming foods. Therefore, we offset the acid-forming foods with a sufficient quantity of alkali-forming foods.

Pavlov has conclusively demonstrated through the most carefully controlled animal experimentation that each kind of food provokes a specific, definite, and purposive type of gastric and intestinal secretion. We will consider the carbohydrates first. Of course, as we all know, the first digestion of carbohydrates begins in the mouth when the saliva hydrolizes the starch, thus preparing it for gastric digestion. After reaching the stomach there is a five-minute delay; at the end of which time the outpouring of the gastric juice begins. The character of the gastric secretion concerned in the digestion of carbohydrates is definite as to quantity, quality, and the rate of secretion. We find that the secretion is slowly poured out, does not reach its maximum until the end of the second hour; that it is rich in ferment and weak in acid. The amount is not very great, yet the secretion is distributed over a long time. One may infer from this observation that it is only the ferment of the gastric juice that is here in great requisition, and that large quantities of hydrochloric acid would be useless or possibly injurious. Consequently, in the digestion of bread, but little hydrochloric acid is present in the stomach during the period of secretion. From clinical observation, we know that in the case of hyperacidity a large part of the carbohydrates escapes unusued from the gastro-intestinal canal, while the meat constituent of the fare is excellently digested.

On the other hand, in considering the digestion of meats, the secretion response varies widely from that provoked by carbohydrates. They provoke a very definite secretion response on the part of the gastric glands. There is a

rapid outpouring of gastric secretion which reaches the maximal limits of outflow within the first hour of gastric digestion. This juice is rich in acid and moderately so in ferment. The reason for this is because of the chemical nature and the fibrous structure of meats. On the other hand, such proteins as are contained in milk, cheese, legumes, nuts and eggs provoke a different type of gastric secretion from that provoked by meats. This is so because of the fat which some of these proteins, as milk, nuts, cheese and eggs, naturally contain. It is a significant fact to my mind that nowhere in nature can we find combined a concentrated starch and a concentrated complete protein, and there are no exceptions, not even including milk. This fact suggests that concentrated starches and concentrated complete proteins are never to be combined in one's dietary.

Fat is the next food to be considered, and its effect upon gastric secretion is very interesting. A fat introduced before, during or after a meal will exert an inhibitory influence over the gastric secretion for from one to two hours. At the end of this inhibitory period, there is a sudden and rapid response on the part of the gastric glands to the contained food. This explains why meats cooked in lard or eaten with an excess amount of butter or combined with milk, or fatty gravies produce hyperacidity.

These and other physiological fundamentals are the condensation of facts which Pavlov has proven. With these in mind, we formulate three definite laws regarding the planning of meals:

First, concentrated carbohydrates are not to be combined with concentrated proteins.

Second, concentrated fats should never be combined with concentrated proteins.

Third, fruits, raw or cooked, should never be combined with concentrated carbohydrates.

The last law regarding the combination of fruit and starch is based upon the fact that the digestion of starch is primarily a reduction process and this must take place in an alkaline or neutral medium. The acid contained in the fruit prevents the proper hydrolization of the starch and in this way delays its digestion.

General Principles

1. Every essential food factor necessary for proper nutrition must be incorporated in the menus of each meal, without combining the three concentrated foods, which are the fats, proteins, and carbohydrates (starch and sugars).

2. The prevailing practice of combining the three concentrated foods at the same meal tends to wear out the digestive glands in the course of time and impairs their function. The combination of concentrated fats, proteins and carbohydrates requires a large amount of digestive juices for digestion, because they constitute a digestive mixture so complex in nature that the digestive glands are taxed to their physiological limit in responding to the various stimuli, which these various foods provoke.

The character of digestive juices which are necessary to properly digest these three concentrated foods varies widely one from the other, and each type of food requires its specific juice. Because of the presence of the three concentrated foods which thus call for antagonistic chemical processes at the same time, it is a physical and chemical impossibility for the digestive glands to function properly as they are subject to definite physiological laws.

3. Manufactured foods, such as sugar, breakfast cereals and other foodstuffs made from bolted (white) flour, are excluded, as far as is practically possible, from the menus.

4. Rules to be followed:

(a) Do not combine concentrated starches and concentrated proteins.

(b) Do not combine concentrated starches and fruits.

(c) Do not combine concentrated fats with concentrated proteins.

There are five digestive fluids: The saliva, gastric juice, pancreatic juice, the bile and the intestinal juice, all of which must be taken into account.

In passing, I pause to comment on the pancreatic juice which is poured out through the tube into the duodenum from the pancreas. It completes the digestion of the starchy foods, which have entered the intestines in the form of maltose, by changing it to glucose. But when this juice does not receive the mineral salts from the pancreas, the glucose passes into the blood, and the kidneys try to eliminate it; thus we find sugar in the urine, or diabetes.

Dr. McCollum states: "All pyorrhea cases are potential cases for diabetes."

On the back of the tongue are eight or ten elevations arranged in a V-shape, around which

are the taste-buds. These are the ends of the nerves of taste, and are responsible for what we swallow.

Sweets are tasted on the tip of the tongue, acids on the sides, and bitter things at its base. Many flavors we do not taste, but smell. In experiments made by Professor Pavlov, he found that where foods were placed through an artificial opening in a dog's stomach while the animal slept, very little gastric juice flowed for several hours; but meat placed where the dog could see it cut up ready for him, the gastric juice flowed copiously in a very few minutes. Thus the digestion is usually improved by placing all of the meal on the table, instead of serving it in courses. It was also proved by him that the nerves of taste call for a definite flow of several digestive juices according to the class of the food tasted. He made a hospital for dogs so sanitary that pus infection would not take place, as he made incisions in a number of the dog's stomachs. Half of them had their gullets cut so that the food did not go into the stomach, yet he found that the same juices were in the stomachs where no food had gone, having only been tasted, then emptied on the floor through the incision.

It is very important that food be pleasing to the eye as well as to the taste. The sight of a savory dish stimulates the flow of the digestive juices for that kind of food. All fluids taken with the food at mealtime, have to be absorbed before digestion begins. Tea, coffee, chocolate and water do not digest food, but they do dilute the digestive juices, leaving them chemically weak to digest food. At meals a liquid should only be taken when the mouth is empty.

From six to eight glasses of water or unsweetened fruit juices should be taken between meals. "If a glass of water is taken at least one-half hour before the meal, and the food is well masticated, the desire for liquid will not be so great at mealtime."

In the field of dentistry we have many investigators, one of the more prominent being Dr. Percy Howe, of Boston, Director of the Research Laboratories of both Harvard University and Forsyth Dental Infirmary, and Dr. Weston A. Price, D. D. S., M. S., F. A. C. D., of Cleveland, and Director of the Research Institute of the American Dental Association.

The Forsyth Infirmary has a million dollar plant and three millions in endowment. Dr. Howe has done nothing but research since 1900, and his work has been largely in the field of physiology, dealing mostly with vitamin C. The monkey has been his main subject for experimentation. He has found that the monkey in his natural state is devoid of dental decay, but when at first he fed his monkeys the usual diet of grains and nuts they soon became subject to many degenerative diseases. Heart, kidney and blood vessel involvements, arthritis and the serious non-development of the bony frame and skull predominated. Dental decay could be induced in seventeen days when the animal was put on a vitamin C deficiency diet, which condition was arrested in ten days when a vitamin C efficiency diet was emphasized, the cavities remaining stationary without dental interference. Some of his experiments are as remarkable as interesting, such as destroying the dental pulp through feeding and the producing of pyorrhea.

The research of Dr. Price has been mostly in the field of body calcium.

The hardening of bones and teeth requires the salts, calcium, magnesium and phosphorus. Silicon is found combined with fluorine in the enamel of teeth. The lack of fluorid of calcium in our food causes a premature decay of the teeth.

Teeth are living parts of the living body; they sicken with the body and get well when the body gets well.

I quote from Dr. Price as follows:

"The emphasis in preventive medicine is passing from repair to prevention and the next great forward movement in dental science will doubtless be effective preventive procedure combined with much more effective treatment. My studies on the relation of dental disease to systemic health, together with the relation of general health to dental disease, have continually led in the direction of the obtaining of much additional knowledge regarding the processes by which the hard structures of the body are built up and taken down in health and disease, and on the role of calcium in determining the functional level of all organs and tissues.

"The data which I have presented indicates that individuals can be classified into groups on the basis of the manner in which they metabolize or utilize calcium, and this is borne out and greatly re-enforced by the continually accumulating data. Many systemic diseases are associated with extensive decalcification proc-

esses in their later stages and some in their early stages. This condition obtains in a striking manner in diabetes, tuberculosis and cancer, the individuals of which groups tend to be free from arthritic processes and quite uniformly free from the proliferative type of arthritis."

Again, he says: "The maintenance of normal defense or immunity requires calcium and phosphorus, in adequate amounts, available in the blood stream quite as much as for the repair of bone, and our entire scheme of preventive dentistry will in my judgment be built upon this foundation. We are therefore going to come to the preparation of the patients for operation, when operations are necessary, by giving then this type of re-enforcement during the time they are making this repair. Further, it is not too much to expect that we shall come to a type of dental practice which will prevent quite as effectively dental caries and pyorrhea and other decalcification processes, and these are quite dissimilar, as we may aid, as I have demonstrated is now possible, in the process of repair of ununited fractures."

I interpret these data as follows: Since a minimum amount of calcium and phosphorus is essential for daily needs in health and a greater amount is required in disease, if the required quantities cannot be supplied from the food, whether for lack of calcium and phosphorus in the food or from lack of activators to make them available, a draft will be made on the storage in the skeleton. This produces a state of stress which disturbs function until that stress is removed by the replacement in the bones of the borrowed calcium and phosphorus.

This condition constitutes an important factor in the development of the so-called degenerative diseases both by disturbing organ function and by lessening the body's capacity to fight infection; hence, there is a reduction in immunity.

"With lowered resistance to infection, local quarantines break down, such as those about infected pulpless teeth, which now become a liability. Such an individual is in negative calcium balance while using calcium faster than he is assimilating it. This condition constitutes a very common and important factor in the expressions of age, whether in early, middle or old age. Such individuals, for the time being, may be said to be dying, or, as someone has expressed it, people do not die from degenerative diseases,—rather they get the degenerative diseases because they are dying. In this state, focal infections, dental or otherwise, may provide a strain of infection with localizing qualities which will, by this tissue affinity, rapidly or slowly break down some organ, and, at the same time, injure the defensive mechanism by the systemic calcium stress. Hence, focal infections should be eliminated before the capacity for maintaining immunity is lost. An infected tooth would require very great strategic value to offset this capacity to do harm. Under nearly all circumstances, therefore, infected pulpless teeth should be removed before the systemic state of lowered resistance develops."

Still quoting Dr. Price: "The colds that many people have, I think, are largely due to the low vitamin content in the foods. Milk and butter are really the chief source of vitamins A and D. Activation of a cod liver oil that is low in suitable provitamins will not improve it. It will do some harm probably, and I would advise against doing it. I do not know where you can get cod liver oil that is always high in vitamin D, because the manufacturers are not yet, as far as I know, putting figures for vitamin D on the bottles except to say that not less than a certain minimum is contained. To state that the contents contain an ample quantity may be enough on the basis of the chicken or rat experiments, although as you see by the evidence here presented it is not nearly so good as that that is high. I think that ultimately the cod liver oil manufacturers and supply depots will furnish cod liver oils with figures for both A and D vitamins. For the present, I know of no better way than to take it myself or to make one or all chemical analyses a biologic test on animals or a spectrographic test. Emulsions are generally low in vitamin D."

Dr. Price has had some wonderful success with long standing unhealed fractures by making blood examinations, finding which mineral was lacking and then feeding in capsules with meals, the necessary element producing unbelievable results. He has also made a graft by using the reports of the U. S. Department of Health over a period of twenty-five years, showing that arrested child developments, hospitalization and death increased from December on up to the middle of Febru-

ary and then declined to a normal level in June or July. He attributed this to the lack of green vegetables and fruits during the winter months, thus depriving the individual of the needed mineral salts. Various systemic diseases make it impractical to apply these principles for dental betterment, and I am always careful to consult the patient's physician in cases of diabetes, heart and blood vessel impairment and interstitial nephritis or when I know the patient to be receiving medical care.

In dental practice I find the greater need of applying dietetics in the handling of so-called pyorrhea, which is not a disease in that there is no specific bacterium to which we can ascribe its inception,—but rather is it a physiological condition brought about by a disturbance of the circulation and nutrition in the supporting tissues of the teeth. Infection and pus are secondary in importance. There is no great trouble in elimination of pus and infection, but the stubborn case is the one where there is a constant absorption of bone through faulty calcium metabolism.

Then dietetics and dietetics alone can help solve your problem. To show how I attempt to make some practical application of this I will now show a few slides.

In trying to make a practical application of dietetics in my practice, my efforts are largely confined to those patients who have unusual evidence of periodontal trouble and whose teeth fall an easy prey to dental caries. My first approach is to present in a brief way the importance of food values as outlined above; then, if the patient shows interest, and after additional instruction, I request that they keep for me a list of the foods eaten for five or six days. Quantities are given in tablespoonsful, cups or glasses, slices of bread, or number of rolls or biscuits, etc. This is gone over at my leisure and then taken up with the patient with explanation of its meaning. While I am doing this, I have them read Percy Howe's Letters and The Food Pilot by Dr. Sheridan C. Waite, published by The Food Pilot Co., Springville, N. Y.

The first slide is of a man 48 years old, a prosperous farmer who brings his truck to town along with milk and butter. Although he raised the green vegetables, you will see from his list that he has not eaten a single uncooked food in this whole time. Upon questioning him about the milk, he said it was skimmed milk from which cream had been taken for sale. Though he said he felt very

SLIDE No. 1

Saturday, February 8, 1930

Breakfast	*Lunch*	*Dinner*
5 Biscuits 2 Oz. meat 2 Cups postum	3 Potatoes 4 Glasses milk 2 Oz. meat	5 Biscuits 1 Oz. meat 1 Cup postum
5 Biscuits 2 Eggs 2 Cups postum	1 Chicken leg 5 Biscuits 2 Spoonsful tomatoes 1 Saucer canned peaches 1 Cup coffee	Meat Evaporated peaches Crackers and relish 2 Slices cake 1 Saucer jelly 1 Cup coffee
4 Biscuits 2 Eggs 1 Cup postum	4 Biscuits Beans 4 Glasses milk Dressed potatoes	Macaroni and cheese Tomatoes 4 Biscuits and butter Saucer peaches Cake 1 Cup coffee
Salmon and cheese 4 Biscuits and butter 1 Cup coffee	2 Slices meat 2 Biscuits	Beans and tomatoes 4 Biscuits 2 Cups postum
4 Biscuits 1 Egg 2 Cups postum	5 Biscuits Dressed sweet potatoes Vegetable soup Milk	Bread Vegetable soup Syrup Postum
3 Biscuits 1 Egg 1 Saucer puffed rice Milk 1 Cup postum	Kale salad and Irish potatoes Cornbread Chocolate pudding and cream 4 Glasses sweet milk	Salad Potatoes Butter Bread Postum

SLIDE No. 2

Friday, February 21, 1930

Breakfast	*Lunch*	*Dinner*
One-half grapefruit 2 Toasted rolls 1 Soft egg	Chicken Rice Cabbage Cornbread	2 Lamb chops 1 Whole wheat biscuit
Orange juice Soft egg 2 Spoonsful wheatina	Chicken Baked potatoes String beans (one helping)	1 Egg 2 Whole wheat biscuits 2 Slices canned peaches
Orange juice 2 Whole wheat biscuits 1 Egg	Chicken String beans Slaw Orange custard	Tomato jelly salad Lemon ice cream Crab flakes
Orange juice (glass) 2 Whole wheat biscuits 1 Egg	Asparagus soup Turkey Peas, Irish potatoes Slaw	2 Oranges
Grapefruit 1 Egg 1 Whole wheat biscuit	2 Lamb chops Turnip salad Irish potatoes Prunes	1 Egg Whole wheat bread Slaw
Orange juice 1 Egg Whole wheat bread	Fish Asparagus Turnip salad Cornbread Apple sauce	Beef stew Slaw Prune jelly
Orange juice Shad roe 1 whole wheat biscuit	Tomato soup Chicken and Gravy Asparagus Baked potatoes Ice cream and cake	Cold chicken Whole wheat bread Potato
Grapefruit 1 Egg 1 Whole wheat biscuit	Chicken hash White bread Peaches	Chicken hash White bread Peaches

SLIDE No. 3

Tuesday, February 20, 1930

Breakfast	*Lunch*	*Dinner*
3 Tbspnsfl. stewed figs 2 Slices toast (wheat bread) 2 Soft boiled eggs 1 Cup postum	Cream tomato soup (20 tbspnsfl.) 3 Soda crackers 2 Pimento cheese sandwiches 1 Orange 4 Graham crackers 2 Home-made cookies 2 Cups postum	Liver and bacon Baked potatoes 2 Bran muffins 1 Banana with mayonnaise 1 Cup tea
1 Orange 2 Fried eggs 2 corn meal cakes 1 Cup postum	1 Bowl cream of pea soup 4 Soda crackers 1 Minced ham sandwich 1 Bran muffin with dates Lettuce, one-half head, with Wesson oil	Fish 1 Boiled potato Stewed peas (4 tbspnsfl.) 1½ Bran muffin Cabbage (raw, with mayonnaise) (4 tbspnsfl.) 2 Cups tea
Sliced orange 2 Poached eggs Whole wheat toast 1 Spoonful stewed figs Postum	Vegetable soup (20 tbspnsfl.) 1 Sardine sandwich (W. W. B.) 4 Spoonsful potato salad Dates Postum	Baked ham Sweet potatoes Banana salad Apple pudding with milk Whole wheat bread Tea
Stewed figs Whole wheat toast 2 Soft boiled eggs Postum	Roast lamb with dressing Cream potatoes (3 tbspnsfl.) Peas and carrots (3 tbspnsfl.) Apple celery salad (3 tbspnsfl.) Peaches	Roast lamb with dressing Cream potatoes (3 tbspnsfl.) Peas and carrots (3 tbspnsfl.) Peaches

well and had not had a physician attend him in ten years, I finally persuaded him to have a thorough physical examination. I called the physician he selected and told him that this man had come to me for treatment of a bad case of pyorrhea and from the oral evidence I suspected hardened arteries and kidney involvement. The examination showed arteriosclerosis, with a blood pressure of 240, and the urine loaded with albumin. Yet, with this warning, this patient has not returned either to the physician or to me for further treatment in two years.

The second slide is from a list furnished by a lady who was able to buy just about what she wanted. Her dietary seems wholesome and nourishing, but upon examination we find faulty food combinations running all through,

SLIDE No. 4

Sunday, February 2, 1930

Breakfast	*Lunch*	*Dinner*
1 Orange 1 Egg 2 Slices toast 2 Cups tea	1 Bowl vegetable soup Small piece of meat 1 Slice bread Celery and mayonnaise	1 Tbspnfl. tomatoes 1 Tbspnfl. cream potatoes Small piece of meat 1 slice cake 1 Cup tea
2 Slices toast 1 Cup postum		Small piece of meat 1 Cup postum 1 Roll 1 Tbspnfl. Chili sauce
Small piece meat 1 Cup postum 1 Slice bread 1 Muffin	2 Cup cakes	1 Tbspnfl. potatoes Small piece of meat 1 Slice of bread 1 Cup coffee
1 Orange 2 slices toast 1 cup tea	1 Slice cake 1 Sandwich	1 Bowl soup 1 Slice bread
1 Bowl oatmeal 1 Cup coffee		1 Tbspnfl. salad 1 Tbspnfl. potatoes Small piece of meat
1 Bowl oatmeal 1 Orange 1 Cup tea	1 Sandwich	1 Cup tea 1 Bowl bean soup

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SLIDE No. 5

FOOD LISTS

Acid Forming	*Alkaline Forming*		*Neutral Foods*	*Phosphorus Rich Foods*
Bread (w. w.*)	Apples	Kale	Butter	Almonds
Beans*	Apricots	Kohlrabi	Buttermilk	Walnuts
Cereals	Artichokes	Lemons	Bacon	Pecans
Chestnuts	Asparagus	Limes	Cream	Fish
Cheese (hard)*	Bananas (ripe)	Melons	Corn oil	Shrimp
Clams*	Berries	Oranges	Cottonseed oil	Lima beans
Crabs*	Beets and tops	Olives	Egg yolk	Lentils
Cranberries	Brussels sprouts	Onions	Fat of meat	Eggs (raw best)
Dried peas*	Cherries	Oyster plant	Lard	Raisins
Fish**	Citron	Persimmon	Olive oil	Also other foods in other columns marked *
Game	Currants	Pineapple	Peanut oil	
Lobster**	Cabbage	Parsnip		
Legumes*	Carrots	Parsley		
Meats	Cauliflower	Peppers		
Nuts*	Celery	Quince		
Oysters*	Celery root	Radishes		
Prunes	Chard	Raisins*		
Plums	Cucumbers	Sauerkraut		
Peanuts*	Dates	Spinach		
Poultry	Dandelions	String beans		
Rice	Endive	Tomatoes		
Rhubarb	Figs*	Turnips and tops		
Scallops	Grapefruit	Tangerines		
Shrimp**	Grapes*	Water cress		
Squash	Kumquat	Vegetable marrow		
White of eggs		Vegetable oysters		

Those with 2 stars (**) are rich in phosphorus.

To acquire body alkalinity and overcome too much acids in urinary tract and blood stream, eat *four* alkaline foods to one that is acid forming. To retain alkalinity of the system once established, from *two* to *three* alkaline foods to *one* acid making food should constitute each meal. In cases of hyperacidity or in any ulcerations of the alimentary tract, a food list should be prepared by a competent physician.

SLIDE No. 6

SUITING YOUR FOOD TO YOUR NEEDS

Fattening Foods	*Normalizing Health Foods*	*Reducing Foods*
Sugar	Whole wheat flour	Bran products
White flour	Whole wheat bread	Bran bread
Bread	Pumpernickel bread	Bran cereals
Pastries	Whole corn bread	Thin soup
Pancakes	W. W. cereals	Lettuce
Puddings	Brown rice	Celery
Oatmeal	All dried fruits	Cabbage
Cornmeal	All fresh fruits	Tomatoes
Corn	All salad vegetables	Spinach, etc.
Cream of wheat	Baked potatoes	Buttermilk (genuine)
Rice	Cooked vegetables	Cottage cheese
Chestnuts	Coddled eggs	Beans
Peanuts	Raw egg shakes	Peas
Peanut butter	Creamed eggs	Lentils
Pecans	Cream	Egg whites
Brazil nuts, etc.	Sweet butter	Mineral oil for salads
Raisins	Buttermilk	Cereal coffee
Dates	Milk cocoa	Acidulous fruits
Figs	Cereal coffee	Lean meat
Prunes	Malted milk	Coffee
Bananas	Grape juice	
Butter	Apple juice	
Cream	Brown sugar (old fashioned)	
Egg yolk	Maple sugar	
Cream cheese	Honey	
Rich milk	Maple syrup	
Malted milk	Roasted meat	
Ice cream	Broiled fowl	
Fat meats	Stewed fish	
Thick greasy soup	Gelatine	
Thick gravy	All nuts	
Oils and shortenings	Scotch oats	
Turnips	Unbolted cornmeal	
Squash		
Pumpkin		
Potatoes		

BE WISE—EAT RIGHT—STAY YOUNG

especially for lunch on seventh day where we find starch, sugar, protein and fats all combined.

Slide No. 3 is from the list of a skilled mechanic. Though variety and food value are both good, yet you will notice that there is present in most of the meals faulty combinations. This patient was suffering from pyorrhea and acid erosion of the necks of the teeth.

Slide No. 4 is from the list of a school girl, 15 years old, with unusual amonnt of tartar deposit on the teeth and somewhat inflamed gingiva. The amonnt of food is so small that she could hardly have faulty combinations but an acid end ash was always maintained through this poor diet. Just imagine a 15 year old girl trying to go through school and maintain proper growth and health on so little food.

Slides 5 and 6 are lists furnished patients that they might be able to have a large selection of foods, hoping that they could find enough of what they liked in order that the effort to balance their dietary would not be burdensome.

In closing, I would like again to emphasize that my main objective is to make these people food conscious and thereby do a little missionary work for the betterment of mankind.

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Medical Arts Building.

THE MECHANISM, DIAGNOSIS, AND MANAGEMENT OF OCCIPITO-POSTERIOR POSITIONS OF THE VERTEX.*

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The fact that occipito-posterior presentation constitutes one of the major problems in obstetrics is justification enough for a paper on this subject.

Just how often this does occur is a variable figure. The reasons for this variation are due to several factors. First, the time of labor at which the patient is examined. Rucker and Potter, for instance, often terminate labor at the beginning of the second stage; consequently, they would encounter more transverse and posterior positions than the ordinary practitioner. Often the obstetrician sees these patients late in labor when the diagnosis is evident. Second, a proper examination and evaluation is necessary for a correct diagnosis. Various figures are given as to the frequency of this condition. Carter, whose paper is freely quoted by the writer, has scrupulously examined the records of a thousand and six deliveries and found seventy occiput posterior and forty-two occiput-transverse, a percentage of 11.2, with no conclusive figures as to the parity. He quotes statistics from eleven other clinics with figures which vary from 4.4 to 30 per cent. The variation is easily explained by the above.

The exact cause for this presentation cannot be given definitely. As in most obstetric problems, the causes are maternal and fetal. In the mother her position at rest and at work, the muscular tone, anatomy of the soft parts and pelvis influence this. The importance of correct diagnosis of the type of pelvis is most important. Improper rotation is notorious in the flat and funnel type of pelvis. So far as the fetus is concerned, flexion is the most important factor, though abnormalities of the cord and placenta are sometimes causative. Other factors which influence this complication are uterine inertia and premature rupture of the membranes. It is problematic whether a pronounced contraction ring is cause or effect, but its frequent association is note-worthy and should be constantly borne in mind. There is still some doubt in the mind of many as to whether the fetal head engages in the transverse or oblique diameter of the pelvis. In any event the long diameter of the fetal skull must at some time pass through the transverse of the inlet in its decent; here is where flexion comes into prominence. The presenting part must reach the pelvic floor before rotation can take place, and flexion, descent, and rotation are dependent on each other. One of the most frequent complicating factors which we have found is a hand or arm underneath the fetal chin which prevents flexion and encourages extension.

The diagnosis is sometimes rather difficult. A study of the mother and fetus may cause us to anticipate this condition. Whenever you find the fetus lying on the right we should be suspicious of a posterior-occiput. Other palpatory findings are the anterior shoulder away from the mid-line, and the forehead felt as a rounded mass above the pubic ramus. The position of the fetal heart sounds are confirmatory only. Rectal examination may not offer much aid but we can at least make frequent check as to the progress of the head, not being confused by the formation of a caput. In most instances we must rely on palpation of the infant's ear by vaginal examination. We have often noticed that these patients complain of a terrific pain over the sacrum and have suspected this condition from this fact alone. The type and length of labor sometimes make you suspicious of an arrested rotation. The X-ray is of great aid if the roentgenologist is familiar with obstetric diagnosis.

In the management of these cases one naturally wonders what the outcome would be if nothing were done to relieve the patient. It is claimed that about 90 per cent will rotate anteriorly if left alone. Most of us will line up with the conservative viewpoint. So long as the mother is not exhausted and the fetus shows no embarrassment there is no reason for haste. The length of labor should not be judged in terms of hours but rather maternal and fetal morbidity. There are several possibilities of the termination of this complication. First, spontaneous rotation through one hundred and thirty-five degrees to the anterior position. Second, it may rotate to a transverse position and deliver under one of the pubic rami. This is rare. Third, the vertex may be arrested in the deep transverse position. Fourth, occiput may rotate to the hollow of the sacrum. In this event, however, there is

*From the Department of Obstetrics and Gynecology, Duke University.

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still a possibility of spontaneous delivery by either extreme flexion or deflexion.

A satisfactory termination of labor is the object which we all strive for; and if the patient delivers spontaneously we are relieved of further worries. However, in certain instances it becomes necessary to employ operative interference. The treatment should begin during the first stage of labor and should be directed toward preserving the patient's strength and morale. This is best accomplished by mental and physical rest, brought about by the use of the various sedatives and narcotics at hand. The patient should be encouraged to eat. Under no circumstances should she be made to use voluntary muscular efforts. The membranes should be kept intact if possible. Some find abdominal manipulation and correction of value; personally it has given poor results at my hands. We should watch very closely for the formation of a contraction ring, and usually terminate labor before it develops. If the ring has developed it can sometimes be relieved by deep narcosis, and occasionally, as was pointed out by Rucker, the use of adrenalin hypodermically is helpful. If the mother or the fetus begins to show untoward symptoms we may have to give relief. We know that an exhausted patient is more apt to bleed, and that edematous soft parts are more apt to tear, and that a patient who is exhausted, lacerated, and anemic is more prone to infection. These we seek to prevent and judicious interference may be considered conservative.

Danforth has developed a procedure which embraces many good qualities. It most closely resembles the method suggested by Tarnier. The head is allowed to engage and necessary molding to take place. The entire hand is inserted into the vagina and the child's head grasped by the fingers and thumb. The head is rotated into the anterior position. This maneuver is aided by the left hand on the abdominal wall with the fingers holding the child's head in the corrected position. The left blade of the forceps is applied. The blade will now maintain the position and the other blade can be put in place. The operator next assures himself that the occiput remains anterior and extraction may then be done. Sometimes it is necessary to push the head upward in order to accomplish rotation, but he has found no complications where molding has taken place. Bill, after a wide experience and many years of close observation, has reduced the procedure used to two,—version and extraction whenever the largest diameter of the fetal head has not passed through pelvic inlet, and rotation of the head by forceps, according to what has been termed the modified Scanzoni maneuvers. This differs from the old maneuver in that rotation is accomplished by the forceps without any effort at traction. This is worth while as it eliminates the spiral movement and the frequently associated lacerations. He reports splendid results. Vaux and Piper elect podalic version in a great many cases and believe that the safety of the infant and mother are best assured by this method. Many operators favor the Kielland or Barton forceps. The use of forceps in this contingency is predicated on some skill on the part of the obstetrician, and an exact knowledge of the station and position of the fetal head and a proper respect for the soft parts. One should remember that if certain rules are not observed, the condition of improper flexion may be exaggerated instead of corrected. In handling these cases we try to appreciate their occurrence, insist on careful pelvimetry, observe carefully, maintain patient in good condition by rest and food, and avoid useless early straining; version is favored in unengaged vertex, and in engaged vertex, manual rotation and correction is done with the judicious use of forceps, paying particular attention to the bladder and rectum. Caesarean section is elected only in absolute pelvic contractions or acute bleeding complications.

CONTROL OF TYPHOID FEVER IN VIRGINIA.*

ROY K. FLANNAGAN, M. D., Richmond, Va.
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A Decisive Battle.—Dr. William Osler, in his great oration on the Campaign Against Syphilis before the Medical Society of London in May, 1917, said: "The story of the conquest of the great infections is the brightest single chapter in the history of Science." and—"To have succeeded within the memory of some who hear me in reducing the mortality of typhoid fever from between 700 to 800 per million living, to the low figure of 35 per million is one of the decisive battles of humanity." The English statistics quoted are beginning to be approximated in this State. In 1913, when our mortality statistics for Vir-

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ginia first began to come in, 709 people died of the disease, or approximately 306 per million living (33.6). In 1929 only 123 died of typhoid, giving a rate of 50 per million or thereabouts (5.1).

We may, therefore, with entire truth say with Osler in paraphrase that the conquest of typhoid fever in Virginia is the brightest single page in the history of Virginia's battle against man's most insidious enemies—these enemies that have lurked so long unseen and for generations unsuspected amid the most familiar scenes and most cherished spots in man's happy memories.

Household Foes.—The victory so nearly complete has been the more remarkable in this democratic land that it has been gained against the handicap of deep prejudice in favor of archaic institutions hallowed by sacred associations. Poets have sung and the pen of genius has recorded in glowing terms the delight of the thirsty soul quaffing with eager lips the sparkling water from the old oaken bucket or stooping on bended knee with heartfelt satisfaction to the cooling nectar from the spring beneath the hill.

The swimming hole, too, has had its inspired eulogists, and every country boy responds to the sentiment with poignant affection. The stable, the barnyard, and even the duck pond and pig-pen at the old homestead have their appeal not only to the senses but to rose colored memory, stirring emotions too deep for words.

Conscientious Objectors.—To change these things in any particular has seemed to many little short of sacrilege, and to some it has appeared preferable to risk death rather than disturb the environmental associations of a lifetime. That the old oaken bucket had been continuously handled through the year by the unwashed hands of the servants and children; that the spring lay beneath the wooded slope on which stood the privy (if any), the pig-pen, and the barn; or that the swimming hole was but a muddy basin catching foulness from many unsanitary homes was entirely beside the mark, and these unpoetic aspects received no serious consideration.

Typhoid fever and dysentery were to the ultra-pious but plagues sent down from above as punishment for sin or warnings for the future, and to draw those unafflicted closer in spirit to God and heaven.

To start a campaign against such a close combination of deep-rooted custom, sentimental associations, and orthodox religious belief, showed a temerity little short of that of those fools who rush in where angels fear to tread.

Science and Leadership.—Since long before Pasteur's researches and Eberth's discovery of the typhoid germ, however, medical men have never hesitated to tell the truths devoted scientists disclosed, and when a leader was found for Virginia in Ennion Williams, the Virginia physicians rallied to him, and our present freedom from the filth-borne scourge, typhoid fever, is the result. From the beginning the State Health Department has stressed education of the public and reliance upon the medical profession as the cardinal tenets of its faith. If at times it has appeared that the doctor's part in this great preventive revolution has been obscured, he may rest assured that no seeming neglect or conscious disparagement can dim the lustre of his fame as the major factor in the war against infectious diseases. His own traditional professional modesty, however, has tended to keep his light under a bushel.

News From the Front.—Since the beginning in 1908 of the State Health Department's activities, regular reports from physicians have formed the basis for its action. Without those reports no health department could do its work. Following the reception of these reports through a series of months and years the real plague spots, so to speak, of the State were revealed, and upon these the limited resources of the State Health Department were concentrated. As the principal sources of these outbreaks were disclosed, the doctors of such communities, led by the local Boards of Health in most instances, applied themselves to removing such sources and educating their clientele in the principles of disease prevention.

The Enemy's Strongholds.—It became increasingly clear at that time that where people congregated most, most typhoid fever abounded, and that the incidence of the disease was in direct ratio to unprotected water supplies and inadequate sewage facilities. This truth was apparent wherever typhoid appeared, whether in town or country. After the second year of the newly organized State Health Department's existence, therefore, an appropriation was secured for the establishment of a Bureau of Engineering. To the carefully planned activities of this Bureau, and the splendid cooperation received by it from the municipalities of the State, is due the sudden

great drop in the typhoid incidence in Virginia. The establishment of protected water supplies and underground sewerage systems in the cities and towns of the Commonwealth, under steady pressure from our Sanitary Engineer, has virtually banished typhoid fever from them. In the campaigns that accompanied the attempt through bond issues to secure funds for these improvements, the local medical profession has always stood solidly with the State Health Department and has furnished the scientific information to their own people upon which intelligent action was based.

The Country Campaign.—As more and more of the towns wiped out their typhoid by comprehensive measures, the State Health Department gave more of its attention to the typhoid problem of the rural districts where hookworm disease and dysentery also took their toll by reason of neglect of fundamental sanitation. With the help of the Rockefeller Foundation and local support, sanitation campaigns of three months' duration were inaugurated by the State Health Department in the most heavily infected areas. Some of these were extended to campaigns of six months and afterwards blossomed out into whole time County Health Departments. Since human excreta is the material in which the germs of typhoid fever and dysentery as well as those of other diseases are harbored, the State Health Department stresses the necessity for establishment of proper arrangements for the disposal of human excreta at every home as a major activity of a local Health Department, and considers a Sanitation Officer a necessary adjunct to such a Department.

The Labor Battalion.—Full time County Medical Health Departments with sanitation and nurse service as adjuncts are not financially feasible at present in many counties in Virginia, and so as a necessary first step in such counties Sanitation Officers are installed on a cooperative basis with County, State, and Public Health Service, and an intensive campaign of privy building is being carried on all over the State. You will, I am sure, be interested to know that Virginia was the first State to develop the Sanitation Officer plan, and that our present Health Commissioner, Dr. Draper, inaugurated it ten years ago while detailed to us from the United States Public Health Service. This Sanitation Campaign is now strengthened by the Sanitary Privy Law, which, when adopted by local boards of health, becomes locally effective and compelling. This direct attack upon the primary sources of typhoid fever is having its effect in a steady and dependable reduction of filth-borne diseases. This reduction has not been as rapid or spectacular as the result in a city when the water is filtered and chlorinated and its suburban privies sanitated in one fell swoop; but when our message gets over and the improved type of pit privy is installed, the typhoid fever rate is definitely and permanently lowered. It is surprising, too, to note how such sanitation seems to affect the incidence of other diseases as well as typhoid fever and dysentery. The following figures from Chesterfield County illustrate this most graphically:

In seven years before the comprehensive sanitation campaign in Chesterfield County,

Typhoid fever showed 32 deaths
In 7 years since only 8, or 75% reduction.
Diarrhea and dysentery showed 122 deaths
in 7 years since only 79, or 35.2% reduction.
Malaria showed 41 deaths
In 7 years since only 2, or 95.1% reduction.
Tuberculosis showed 267 deaths
In 7 years since only 165, or 38% reduction.
All causes of death showed 2,112 deaths
In 7 years since only 1,611, or 24% reduction.

This demonstration of the value of detailed sanitation is sufficiently convincing to satisfy any open mind.

Responsibility for Defeat.—Typhoid fever due to insanitation is a disgrace, and as long as the disease continues to crop up the stigma attached to the presence of open filth depositories and neglected water and milk protection rests upon the community and particularly upon the home that permits gross insanitation upon its premises, upon the Health Officer who has failed to apply epidemiological and sanitary principles, and upon the doctor who fails to anticipate trouble, to advise precaution, to report on suspicion, and to call for help promptly as need appears. In many places in Virginia the family physician is still the only person available with knowledge enough to anticipate typhoid fever from the environmental conditions he sees at many a home. As in time past, he continues to be the State's only reliance in such cases. I for one do not expect him to fail to meet the issue.

A Council of War—With typhoid fever in Virginia on the run before measures well recognized and long approved, it would seem

that it needs but a final charge over the top to complete the rout, and, but for a few importations from outside the State now and then, to eradicate it entirely. This the State Health Department through its Bureau of Epidemiology is attempting to do. We have found that for the past several years most of the typhoid fever that is reported to us shows all the ear-marks of carrier-typhoid. The disease pops up now and then out of a clear sky, with no history of contact with a case, and a close investigation of all contacts reveals at times a heretofore unsuspected carrier. A remarkable case in point in my experience several years ago, occurred at a dairy furnishing milk to Staunton, Va. An outbreak of typhoid had occurred several years previously on the milk route of this dairy. It was decided by our investigators at that time that an unprotected spring showing pollution was in all probability responsible. This spring was protected and cleared of pollution; the epidemic stopped and all was serene. Four years later or thereabouts an explosive outbreak of mild typhoid occurred among a number of children drinking milk from this dairy, all virtually taken sick at the same time. No typhoid fever could be linked up with the dairy farm or the milkers. The dairy was clean and well conducted with a pure, well guarded water supply. A search for a carrier was instituted and it was found that the proprietor of the place, who only milked the cows in emergency, was a carrier who had had typhoid fever many years before. He had, during the absence of an employee, milked a few cows about two weeks previous to the outbreak, with an epidemic of typhoid and the destruction of his business as a consequence.

Sporadic cases through a series of years at Port Republic, Va., investigated by our Bureau of Epidemiology, developed the fact that a citizen who had had typhoid fever in 1920 spread the disease to eight or nine other people from 1921 to 1928, two of whom died. Every physician practicing for ten years will recall cases in his own practice which he could in no manner account for. Unrecognized carriers in the neighborhood would readily explain them.

Over the Top.—We are now trying to enlist the doctors of the State in a specific attack upon the carrier of typhoid. When a case is reported to us. our Epidemiologist writes to the doctor enclosing a card upon which is indicated the data needed to enable us to form a judgment. If there is a Sanitation Officer or a Public Health Nurse available locally, they are communicated with by us and urged to assist the doctor and the local Board of Health in securing the cooperation of the family in preventing further spread. Bulletins to this effect are left with the family. Sanitary disposition of excreta, not only of the patient, which the doctor has already insisted upon, but of the family too is urged, and aid is rendered where necessary in carrying out the provisions of the Sanitary Privy Law. Screens are recommended and aid given in securing at least a temporary screening of the sick chamber during illness. Fly swatters are put into use, fly breeding places are treated, and fly traps too are called into play.

The doctor's efforts are backed up in regard to administering typhoid vaccine to contacts and to people living in the neighborhood of the case. The vaccine is furnished free to the physician if he will administer it. Local health workers are urged to collect at convenient points those who should be vaccinated so as to conserve the doctor's time. The doctor may utilize the nurse in this work if he and the local Board of Health deem it advisable. In order to determine whether the case continues to carry the disease, the doctor is urgently requested to send a series of fecal specimens to the Laboratory. In this he will be assisted by the Public Health Nurse if the County is so fortunate as to employ one. The first specimen should be sent during the third week of illness. The second specimen as soon as patient is up and walking about. The third, one week following the second, and a fourth one week following the third. At least four specimens should be sent. Others, of course, should be sent at intervals if typhoid bacilli continue to be found. Where people will not cooperate by collecting these specimens, rectal swabs will serve the purpose. These specimens will be collected and mailed by the nurse if the doctor in charge delegates this duty to her.

Treatment of Prisoners.—There is nothing known that will absolutely insure complete eradication of typhoid bacilli in a chronic carrier. By far the greater number of typhoid cases clear up after complete convalescence. The search for carriers is simply an effort to know who and where they are, to make sure

that they do not engage as a vocation in handling milk and food eaten raw; to see that they and those nearest them may be informed and instructed, and may thereby guard against the possibility of spread of the disease. People in the home of a typhoid carrier should be regularly vaccinated against typhoid fever every two years. No typhoid carrier should be permitted to draw water from an open well or handle food to be eaten raw by others. The most absolute discipline as to washing hands after toilet and before eating should be observed. If these precautions are taken and pledge of cooperation secured from the patient, no publicity as to the case need be given. If otherwise, then the public should be informed so that it may guard itself.

The Price of Peace.—The time will come in the not distant future when for the doctor not to know the typhoid carriers in his practice will be a serious reflection upon the quality of the service he renders the community. For he will be under obligation to discover these carriers among his clientele. This is but one of the aspects of preventive medicine which he as a citizen, apart from his status as a health conservator, must regard as a duty. These public duties have a way of piling up on the doctor, and the discharge of a duty generally carries with it little if any pay. He, however, has rarely dodged the issue when matters of life and death faced him for solution.

The State Health Department thoroughly appreciates the problem that at present confronts the general practitioner, and, together with organized medicine in Virginia, is applying its best thought and endeavor to save him whole and prosperous in the midst of a generation that is demanding in ever increasing numbers preventive service of him.

A RATIONAL VIEW OF ECZEMA.*

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The subject of eczema is such an important one, not only from a dermatological aspect, but from a general medical view as well, that I do not feel called upon to apologize for bringing before you this subject about which so much has already been said. When one realizes that eczema in its widest sense reprerents about 40 per cent of dermatology and, therefore, between 2 per cent and 3 per cent of all medical complaints, it is a subject which must be of considerable importance to the practicing physician. If, therefore, I can present this subject with possibly some slight variations and new angles, I feel that your time will not have been lost.

I need hardly call your attention to the obvious fact that rational therapy in all branches of medicine depends largely upon the establishment of the true etiological mechanisms of the disease processes in each individual case.

Compare the treatment of tuberculosis, appendicitis, syphilis, pneumonia, rabies, diabetes, pernicious anemia, small-pox, typhoid fever, malaria, and scores of other diseases, both as to care of individual cases and as to prevention, as practiced today, with the woeful lack of scientific care of a century ago. And, conversely, compare the marvelous results obtained in the above diseases with the continued advance of cancer, which so far has baffled all the efforts of research in isolating the true etiological mechanism. It is true that cancer in individual cases can be dealt with quite successfully, notably by surgery and radiology, and occasionally by some of the various sera which are being elaborated, but cancer continues to make its appearance more and more frequently each year, and thousands die of this without a shred of hope. Tomorrow or next year, or ten years hence, or whenever the cause of cancer has been definitely established, this disease will no longer be the horror to medical men that it now is.

And as other diseases are receiving constant study in an effort to understand them more fully and to treat them more intelligently, eczema in recent years has been receiving its share of research as to etiology. No longer is it considered a "boiling out of poisonous humours" circulating in the blood. No longer can "too much acid" in the blood be blamed as the cause of eczema, but a rational conception of this disease is beginning to appear. The above beliefs were held generally even in the beginning of this century, and when, fifteen or twenty years ago, the theory which is now recognized as a truer conception of the disease was propounded, it gained little credence. Eighteen years ago Highman defined eczema as a "cutaneous catarrh due to an interplay between various known and unknown local and predisposing causes to which the skin

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lesions are reactions." This definition has been elaborated and, I believe, clarified by various other men, so that now eczema may be defined as being produced by an eczema-evoking substance coming in contact with an eczema-responsive skin. The eczema-evoking substance has been termed the eczematogen and the eczema-responsive individual the eczematic. The eczematogen is characterized as having a pathogenic potential and the eczematic skin as having a responsive potential, so that the two potentials actively manifest themselves only when the agent comes in contact with the skin. Thus, any eczematogen coming in contact with an eczematic skin will produce the reactions which are termed eczema, whereas, coming in contact with a skin which is not eczematic in potential will produce no disease, and, conversely, as long as the eczematic skin does not come in contact in any way with its particular eczematogen no response will be observed.

The eczematogen can come in contact with the skin in any one of three ways: most commonly by contact with the exterior, as, for example, ivy poisoning; by growth on or in the skin, illustrated by ringworm; and, finally, by the circulation of toxins in the blood stream, as is evidenced by various food allergies.

As the commoner etiological factors have been discovered by diligent research or intelligent observation, the processes developed on the skin by these have been given names and taken from the mysterious melting pot of eczema. The first disease to claim the eminence of a clinical entity differentiated from eczema was the acute vesicular process produced by contact with rhus toxicodendron and allied plants. For centuries what to us now seems obvious, was completely obscure to our forefathers. Certain people, coming in contact more or less intimately with the plant of poison ivy, suffered from an acute eruption which bore all the characteristics of eczema. Whoever was the first to recognize this fact achieved an epoch-making advance in the etiology of eczema. In the light of our accumulated knowledge, this observation may seem very puerile, but at the time it was made it was astounding and paved the way to the proper lines on which modern research in eczema has been undertaken.

Today there are many conditions originally classed as eczema which are no longer considered so mysterious. Ringworm (athlete's foot), until the past decade and a half was almost invariably termed pompholyx or dysidrosis. With the isolation of the various types of fungi which produced this condition, and the proof of their pathogenic activity, ringworm has become a fairly simple condition.

Proper treatment and measures for prevention of recurrence and reinfection make this problem a simple one to the individual sufferer. In the past year or so advances have rapidly been made epidemiologically. Care of public resorts, pools, gymnasia, etc., in many cities has gone forward with rapid strides, and a great deal is being accomplished in the prevention of these epidemics.

Occupational dermatoses are receiving their proper attention, and with the recognition of eczemas induced by various occupations, therapeutic measures are being employed in the prevention and cure of individual cases. The recognition of the etiological factors in acute seborrhoeic dermatitis has brought this out of the category of eczema and its rational treatment has been properly elaborated. Food allergy, particularly in infantile eczemas, is now well recognized, and a great deal can be done for these sufferers who a generation ago were only pitied.

Thus we see that no longer must eczema be treated empirically, with the application of a soothing lotion to relieve acute inflammation, followed by various salves to remove thickening and to peel the skin. The epigram "there are skin diseases which mercury will heal, those which sulphur will heal, and those which only God can heal," cannot stand today. The approach to this disease must be from another attack entirely—that of etiology: careful and painstaking histories, search of fungi in appropriate cases, trichophytin tests when indicated, study of environment for possible offending irritants, careful questioning into diet, cutaneous tests by the scratch method, percutaneously, the patch test, passive transfer—any or all of these must be employed.

I want here to quote briefly a few case histories to illustrate my points. I hesitate to quote them as they are undoubtedly the experience of everyone who has done any work with eczema—a number of successes and a certain number of failures. However, at the expense of seeming egotistical, I believe that my points can be made more clear only by utilizing them.

Case 1. White female, age 19, first seen

March 6, 1930. Complaint: Breaking out on the skin constantly since early infancy. She had never been free of eruption, although there had been times when treatment had been of temporary benefit. Examination revealed a widespread eczema involving the face, neck, shoulders, back, flanks, bicubital spaces, forearms, wrists, hands, popliteal spaces, and ankles. Before consulting us she had been treated by a considerable number of physicians in her home town, in Philadelphia, and in Baltimore. A large number of X-ray treatments had been employed. She had been worked up on several occasions; nothing internally had been found deranged except one report of a "spastic colon." Treatment for this had benefited her none. She had received probably every salve and lotion in the pharmacopeia. The distribution, type, and duration of the disease suggested a food allergy. She was tested intradermally to sixty-two food products and animal emanations. She was found to react to twenty-one of these. This formidable list was excluded from her diet, and animal emanations, notably goose-duck feathers (used in pillows), removed from contact with her skin. Her eczema cleared up very promptly to mild local applications and a course of ultra-violet radiation, and the questionable allergens were one by one returned to her diet after her skin had cleared. We were successful in returning all of these products with the exception of egg white to her diet without producing any cutaneous difficulty. The amount of egg white used in a one-egg cake, however, was sufficient to cause an exacerbation of her eczema on the eating of one teaspoonful of this cake. The patient has now been free from eczema for over a year, although she had suffered from it for nineteen years prior to the removal of egg white from her diet.

Case 2. White female, age 16, first seen September, 1929. She also complained of eruption on her skin since infancy. She was found to have an eczema involving her neck, both shoulders, back, both bicubital and popliteal spaces. Before consulting us she had been treated by a number of physicians in her home town and Philadelphia with little or no benefit. As in Case 1, allergy suggested itself, and she was tested to sixty-one foodstuffs and animal emanations. She was found to react to tea, rice, cocoa, goose-duck feathers, oysters, shad, lima beans, and sheep wool. The foods were removed from her diet and contact with sheep wool and goose-duck feathers was eliminated. Her eczema responded very promptly, and the offending agents were reintroduced into her diet and contact with the skin. It was found that she had no trouble from goose-duck feathers, lima beans, cocoa, tea, or rice, but that oysters, shad, and wool produced exacerbations of her eczema. It was a fairly simple matter to keep her away from oysters and shad, but wool was a very difficult thing and each time that she wore wool her eczema relapsed. For this reason she was disensitized to wool by the use of small doses of sheep wool extract injected subcutaneously over a period of several months, the detailed technique of which I need not here go into. At the end of this period her skin no longer reacted to wool when tested intradermally, and she has since been able to wear woolen dresses with impunity. Here is an eczema of fifteen years' standing, controlled by discovery and elimination of the offending eczematogen.

Case 3. White male, age 17. Complaint: Eczema since the age of 8 years. During the past nine years he had been treated by several of the best men in Pittsburgh (his native city) with little or no benefit. Examination revealed an acute weeping eczema involving the face, neck, bicubital spaces, popliteal spaces, and ankles. As in the other two cases, cutaneous tests were performed and were positive to only one substance, namely, coffee. Further questioning revealed the fact that he had been in the habit of drinking two to four cups of coffee daily since the age of eight,—in fact, since shortly before the onset of his disease, although prior to questioning this association had not been observed. Coffee was removed from his diet and in two weeks the patient was entirely free of his eczema for the first time since its onset, nine years previously.

Case 4. White male, age 56, first seen April, 1931. This patient complained of an eruption of nine months' duration. The disease had started in July, 1930, and progressed unchecked throughout the summer, to improve considerably during the fall and winter, although it had not entirely gone even then. Two weeks before consulting us he had spent some hours in a bathing suit working with his boat. Examination revealed an eczema involving the face, neck, shoulders, arms, forearms, and legs.

The distribution over the shoulders and legs followed the skin exposed when wearing the bathing suit. This suggested the possibility that his disease was produced by contact with some agent while wearing the bathing suit. A small area on the right forearm, flexor aspect (where there was no disease), was exposed to the ultra-violet light for four minutes and a corresponding area on the other forearm to the infra-red. The next day an eruption similar in all characteristics to that elsewhere on his arms and shoulders was present in the area exposed to the ultra-violet, while no change was observed in that exposed to the infra-red. The patient was cautioned to protect his skin from the sunlight, after which his eruption disappeared within three weeks under local palliative measures. He was then allowed to bathe only after 4 P. M., when the actinic rays are practically absent from the sun, which he has been able to do with no further difficulty.

Lest the impression be given that the cause of all eczemas can easily be established, I want to present one case which reveals the other side of the picture.

Case 5. White female, age 20, first seen August, 1930, complaining of an eczema of four years' duration. Examination revealed a typical chronic eczema involving the face, neck, back, arms, bicubital spaces, forearms, and popliteal spaces. Careful search of her history revealed nothing to suggest the etiological factor. Seventy-two intradermal food tests were negative, patch tests to a large number of the articles with which she came in contact in her work were also negative. No leads of any sort could be obtained on repeated questioning. This patient has now been under treatment for just one year. She has been very cooperative, and everything which my ingenuity could devise has been tried with very little benefit to her. Prior to her coming to see me she had been treated during the four years previously almost constantly by two other dermatologists with essentially the same results.

In conclusion, I want to urge you strongly against the figurative throwing up of hands on seeing a case of eczema, and passing over the disease with the statement that it is probably "too much acid in the blood." Although this theory has long been in the discard, at least half of my eczema patients come to me with the complaint that they have too much acid in their blood. Many have been told this by their physicians in this so-called enlightened age. I want to discourage this hopeless attitude and to plead for as rational an attitude towards eczema as there is towards most other diseases, to search diligently and honestly with all the means at hand for the true etiological factors, or for the proper eczematogen which comes in contact with the particular eczematic in producing his eczema. In some cases this is very difficult, in a few apparently impossible, but in the large majority your efforts will be rewarded.

1011 *North Charles Street.*

EVALUATION OF RADIATION THERAPY IN ADVANCED CANCER.*

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The value of radium and roentgen rays is generally indisputable in early cancer of the skin, oral cavity, breast, and cervix uteri. These agents become even more indispensable in the late cancers involving these regions, as well as in other advanced or late cases, because in these advanced stages there is no other procedure that offers as much hope or benefit. These hopeless cases, which daily present themselves, are entitled to just as much care and consideration, and just as much effort should be spent on them as on the cases which offer a chance for permanent cure.

The late cases are in the majority; they become a burden to their families and communities, so that the social and economic problems, aside from the hospital taxations, are of serious importance. If we can add an extra year of life to these unfortunates and make their last days more comfortable; if we can give them a little encouragement and relief by a treatment which offers some hope, however meagre, then that treatment is well worth while. How frequent it is for the radiologist who has been called in consultation and advanced the opinion that there is little or no chance of curing the malignancy, but that lessened pain, increased comfort, and probably prolongation of life is practically certain, to receive the reply: "What's the use of subjecting the patient to all this treatment if you cannot cure him?" Imagine, if you can, the

*Read before the Norfolk County Medical Society, January 11, 1932.

hopelessness of being told that your, or your loved one's, disease is incurable, but that there is no use of doing anything even to increase comfort or lessen pain; that it is not worth while to even attempt to prolong your life for a few months or years of comparative comfort. To draw a parallel, the internist treats a great many conditions that he has no hope of curing, as certain chronic cardio-vascular diseases. We speak of the management of such diseases and not their cure.

With our present knowledge of the treatment of malignancy, the majority of sufferers from the disease suitable for radiation treatment are incurable at the time they first present themselves, if we except cases of epithelioma of the skin. Palliative treatment is, therefore, of prime importance, since it involves the majority of the cases seen. Statistics show that the average radiologist is called upon to treat about two and one-half times as many incurable cases as he is those in which he can hope for a recovery. It is not always possible to decide when a case is first seen and examined, whether that case is curable or not. In fact, it is frequently impossible. Fortunately, however, a correct estimation as to the curability of a case is not often essential, because the treatment which would be proper to apply where one expected a cure in a majority of instances would be equally applicable in an incurable case. The advanced cancers have shown sufficient improvement in some instances to justify intensive radiation when the physical condition of the patient permits, not only from the standpoint of relief of pain, but for actually prolonging life. If this policy is followed, one will occasionally be agreeably surprised to see an apparently hopeless case recover.

It is practically impossible to predict the progress of most cases of advanced malignancy. With this in mind, it seems logical that the best way to achieve palliation is to disregard what we are accustomed to think of as palliative treatment and treat the patient as if a cure were expected,—unless the case is beyond all question obviously hopeless. There are very few patients whose physical condition will not permit adequate radiation therapy judiciously administered. Inadequate dosage, and haphazard and improper technique, are responsible for a great many undesirable and disappointing results and consequently conflicting opinions and reports. So-called acquired resistance to radiation following repeated inadequate dosage is a very general and noteworthy observation, and should be avoided.

The general physical condition of the patient probably regulates more than any other single factor the final end results of irradiation. Good results are rarely to be expected in the weak, anemic and cachectic individuals, whereas a patient in fairly good health, normal blood count and good physical endurance may show an extraordinary response for the same type malignancy. There are, of course, certain types of malignancy which are very resistant to radiation, and often there is no way to determine this fact before treatment. Biopsy may give some information on this point and is probably desirable in most cases. However, this is not as important in the advanced, or late case, as it is in the earlier case. If it can be shown that the patient has a type of malignancy well known to be highly radioresistant, the indication for more active treatment, in order to achieve palliation, is obvious.

Our aim should always be to destroy as much malignant tissue as possible, always keeping in mind the effect of such destruction on surrounding normal structures and on the patient's welfare as a whole. There is nothing gained in applying treatment which destroys the disease, but kills the patient.

When a case is absolutely hopeless, as evidenced by extensive involvement of some vital organ, or metastasis, it should not be treated with the same severity as a more hopeful case. For instance, if there is lung involvement or secondary bone involvement, we can usually keep the patient much more comfortable by applying smaller doses of radiation than would be used if the condition were not so far advanced. It is believed by some that repeated small doses of radiation bring about fibrosis in a tumor, and that a large part of the improvement which may be noted is really due to this fibrosis. The amount of fibrosis occurring in tissues following irradiation is apparently in direct proportion to the amount of destruction of radio-sensitive cells. Therefore, it is essential for the radiologist to have a good knowledge of the radio-sensitivity or radioresistance of normal and pathological cells. The reaction of a normal cell to radiation is dependent on its metabolic rate. In other words, cells which are undergoing active mitosis are

readily destroyed by short wave radiation, and adult cells with not any or a slow mitotic rate are difficult to destroy. The first morphologic changes which occur in malignant tissue under the influence of radium and X-rays are observed in the tumor cells themselves and are manifested by the vacuolation of the protoplasm, pyknosis of nuclei, karyolysis and ultimately complete necrosis of the cell. These cellular changes are accompanied by a round cell infiltration which replaces the destroyed cancer cell. Subsequently, this round cell infiltration is changed into dense, sclerotic connective tissue, poor in blood vessels. This connective or fibrous tissue formation may become very extensive, surround islands of cancer cells, and assist in the destruction of the latter by interfering with their nutrition. Furthermore, clinical and experimental investigation has shown that radium and X-rays may impair deeply the proliferating power and consequently the clinical malignancy of the tumor without producing any apparent change in its morphologic appearance. It is quite probable that the first effect of the rays on every malignant tumor is the inhibition of the proliferating power, the sterilization, as it were, of the cancer cells, and that the degeneration and destruction of the tumor cells and the formation of sclerotic connective tissue takes place subsequently. The important role of this fibrous tissue formation cannot be overestimated.

The radiation treatment of malignant disease has now passed through the troublesome optimistic and pessimistic periods and is now established on a fairly scientific basis, as, for instance, standardization of equipment, estimation of skin tolerance for intensive treatments, systematizing fractional doses to the extent of skin saturation or tolerance, and an evaluation of clinical responses on the basis of tumor grading according to the cellular differentiation and sensitivity. In most instances the sensitivity of a tumor is finally determined after radiation has been given.

The success of radiation therapy largely depends on the technique of application, which should be governed by the underlying physical, biological and pathological factors. A high total dosage is the first essential in destroying or arresting most true carcinomatous processes, and, as a rule, the most tumor destruction and tissue reaction and the best results are obtained by delivering this dosage as soon as possible. In employing high voltage roentgen rays we make use of the so-called saturation technique, as advocated by Pfahler in treating most cases of deep seated malignancy, and, I might say, our results have been much better since we have been employing this method. The saturation method consists essentially in delivering a maximum dose (approximately 100 per cent E. S. D.) into the diseased area, and then maintaining this effect for a certain time by means of additional smaller doses to correspond to the loss in effect during any given period. This loss of effect follows the law of mass reaction, that is, the rate of loss represents a logarithmic curve. The theory is that if the radiation can be kept at saturation point during the brief period of sensitivity of the malignant cells and while these cells are still undergoing division, it is likely that the growth can be more completely destroyed. The maximum dose is delivered as quickly as possible to the tumor area, employing multiple fields and cross-firing the rays, and the dosage is retained at saturation point for from ten to fourteen days by means of additional smaller doses. This technique is an undoubted advance over all others, and the reports show that better results are obtained by it than by any other method.

Consideration will now be given to the general plan of treatment which has been found most efficacious in advanced carcinoma of various types and most usual locations.

Carcinoma of the Breast

We will assume that these cases have reached such a state as to offer no reasonable hope of cure. Treatment of such a cancer thus becomes a question of palliation. In undertaking palliative treatment, we should study the case thoroughly and attempt to procure the greatest possible comfort and sense of well-being to the individual for the greatest possible length of time. It is obvious that few rules can be formulated which are applicable to all, or even most of the cases. The individual case is largely an individual problem which must be considered from many angles. In general, the plan of treatment resolves itself into a combination of radio-therapy and surgery. In those cases in which there is a large metastatic tumor found in the axilla and no other evidence of distant metastases, a good therapeutic procedure is to insert radium, or radon, into the tumor masses of both the breast and axilla. This may be supplemented by high voltage

roentgen rays. Under this treatment the tumor shrinks and may become movable off the chest wall. From four to six weeks later, when both tumors have shrunk considerably, a mastectomy may be performed, followed by post-operative roentgen therapy. A patient suffering from a large fungating and ulcerating tumor of the breast which constantly secretes foul discharge is a burden to herself and her associates. Such a case may be treated by the insertion of radium, or radon, into and around the ulcerated area of the tumor, followed by surface application of radium and X-ray therapy. After a period of four to six weeks, the ulcer and tumor generally become diminished in size, and more freely movable, so that a mastectomy may be in order, followed by post-operative roentgen therapy. It must be clearly understood that this represents only a palliative procedure. It seems, however, not only to prolong life (and this is its main advantage) but to make the life of the patient more bearable. It is much more comfortable for the patient, both bodily and mentally, to succumb ultimately to internal metastases than to live for months with a large fungating, offensive carcinomatous ulcer.

In post-operative recurrence and in cases with metastases into distant organs, only temporary palliative results may be expected from either surgery or radiation therapy. However, even in this type of case very gratifying results may be obtained by proper management. Most remarkable results are occasionally obtained in the treatment of skeletal metastases from carcinoma of the breast by the aid of surface application of X-ray and radium therapy. It must be admitted that in general the treatment of hopeless cancer of the breast, or elsewhere, is a discouraging task. It is one, however, that should not be evaded. The morale of the patient is much more likely to be preserved if she does not feel that she is being deserted by her physician. Much can be done to encourage the sufferer and to alleviate the discomfort and suffering by the proper application of radium and roentgen therapy.

Carcinoma of the Uterus

In advanced inoperable lesions of the fundus, radium introduced into the uterine canal, supplemented by high voltage roentgen rays applied externally in adequate dosage, may give considerable relief. The main limitation of treatment with radium is that the required dosage, the exact placing and the exact results cannot be accurately determined. In other words, as Kelly has pointed out, we are working in an invisible field and have no method of determining the surface extent or depth of the lesion and the exact placing of applicators. Bowing, in a recent review of cases in which treatment was given with radium and roentgen rays at the Mayo Clinic from 1915 to 1928, inclusive, concludes that irradiation accomplishes commendable results, whether used alone or as an adjunct to surgery, and the surgeon is relieved of accepting high operative risks and may perform less radical operations by combining his work with carefully applied radiotherapeutic measures.

In carcinoma of the cervix, radiation therapy has one of its greatest fields of usefulness. The principle underlying the plan of treatment, as practiced at the Memorial Hospital, New York City, is to "cross-fire" with radium and high voltage roentgen rays, the entire primary lesion and also the lymphatic drainage area, through which the disease spreads from the primary focus.

A complete treatment consists of a high voltage cycle to the entire pelvis, radium tandems in the cervical and uterine canals, vaginal applicators to the cervix and, in some cases, interstitial irradiation by means of radon seeds buried in any part of the primary lesion which has not responded satisfactorily to the other treatments. In general, the roentgen cycle is given first, which is followed by the vaginal and cervical radium treatments within ten days after the roentgen cycle has been completed. In many advanced cases the high voltage roentgen cycle is repeated to advantage in six to eight weeks after the first series.

In many cases, due to poor general condition of the patient and the presence of a marked secondary anemia, palliation only can be attempted, and we must be careful that our palliative treatment does not make the patient worse instead of better. In these cases, before the use of radiation, it is necessary to restore the patient's strength.

Transfusion is the best and quickest procedure for overcoming blood loss, and may be used to advantage at any time during the course of treatment.

High voltage roentgen therapy is particularly useful in such cases. The treatments may be given in divided doses, while general medical measures are being carried out. In the

majority of instances, such treatment will be followed by marked reduction in size of the ulcerated area and in the amount of fungating infected cancer tissue. The bleeding and discharge diminish and the patient's strength gradually returns. The roentgen cycle may be repeated to advantage in six or eight weeks, and in the interim radium may be applied to the vaginal surface of the lesion. Occasionally, a very radio-sensitive lesion will respond so well to this treatment that a considerable prolongation of life may be obtained.

Intrapelvic glandular metastases, as a rule, do not respond well to external radiation therapy.

Carcinoma of Genito-Urinary Tract

Prostate.—Radiation therapy is not so encouraging in this affection and can hardly be considered other than palliative. The ideal procedure is the use of radium supplemented by cross-firing of the pelvis externally with high voltage roentgen rays. By using this combination, or with roentgen therapy alone, considerable palliation can usually be obtained.

Bladder.—In primary carcinomata of the bladder that are recognized as inoperable, and also the secondary malignances arising from the uterus, rectum or prostate, the results, while not brilliant, are sufficiently encouraging and gratifying in most cases to make it worth while to treat every case by irradiation. Hemorrhage and pain are, generally, more or less relieved, and occasionally the tumor practically completely disappears. Success in treatment of these genito-urinary conditions depends to a great extent on the cooperation of the urologist and radiologist.

Carcinoma of the Rectum.—Cancers of the gastro-intestinal tract, particularly the adenocarcinoma of the rectum, are resistant to radiation. Probably the greatest palliative measure in this condition is the establishment of a colostomy. Having done this, if it is decided that the remaining treatment can be only palliative, contact applications with radium, supplemented by high voltage roentgen rays externally, may give a great deal of relief, although the chances of a cure by this method are very remote.

It is possible in some cases to treat adequately without colostomy. In this event, the colostomy should be elective rather than emergent. There is a possibility that in some cases the condition may be made operable by suitable radiation treatment and a sufficient interval of time.

In conclusion, an attempt has been made to show the value of radium and roentgen rays as palliative agents in the treatment of advanced cancer, which has reached such a state as to offer no reasonable hope of cure.

Palliation is generally intended to imply any one of a score of proverbial epithets—cessation of bleeding or discharge, relief of pain, local or primary healing, improvement in health and strength, prolongation of life, temporary or partial resumption of usual occupations, or a mental buoyancy that gives the patient a new lease on life.

In the treatment of an advanced, or hopelessly inoperable cancer, the accomplishment of any one or more of these improvements is indeed an achievement and makes the effort well worth while.

BLASTOMYCOSIS.

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Blastomycosis (blastomycetic dermatitis) is generally described as a chronic infection which frequently attacks the skin, and gives rise to reddish or purplish, moist, papillomatous lesions. It is not uncommon that the internal organs may become involved. The name, blastomycosis, is a misnomer. The organism is not a true yeast, although yeast-like forms (budding forms) are seen in the tissues. Cultures disperse any idea of the saccharomyces relationship of the fungus. The exact position is not known, but the genus oidium probably is as near as any at this time.

The disease begins, as a rule, in the skin and subcutaneous wound infection on some exposed surface of the body, the face, hands and arms being favorite sites. The lesions progress from papules by peripheral extension or by the development of new foci until large areas are involved. Crusting is present and on removal of the crust the underlying lesion is found to consist of irregular, papillomatous tumors of a reddish or purplish hue, bathed in a seropurulent fluid. Yellowish areas, small in size, are seen throughout the surface. These are small abscesses. At times the miliary abscesses may coalesce and give the lesion a car-

Fig. 1.—Blastomycosis of forearm.

buncloid appearance. The lesions generally heal, somewhat, in the center, with the resulting formation of whitish, atrophic scars. In most of the cases the malady attacks only the skin, but occasionally the infection becomes systemic.

The diagnosis may be made by demonstrating the fungus in the pus from the abscesses, or by histological methods following a biopsy. In the first instance, the pus may be mixed with a small amount of 10% sodium (or potassium) hydroxide and the organism demonstrated as a

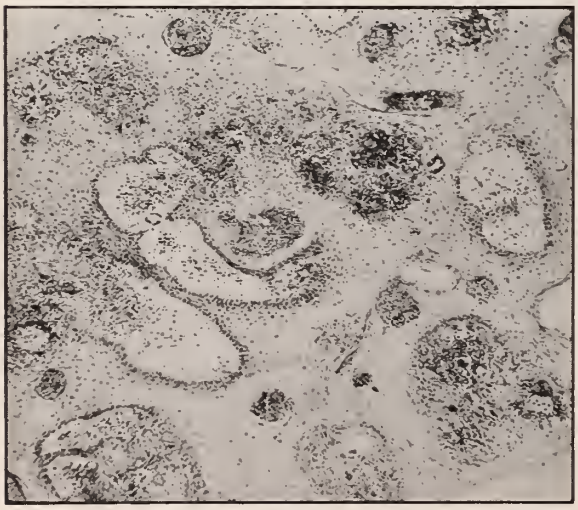

Fig. 2.—Blastomycosis cutis, showing downgrowth of epidermis and miliary abscesses. Low magnification.

doubly contoured budding fungus; or the pus may be cultured and the organism identified in that manner. The growth appears as a cottony colony which, when viewed under the microscope, is seen to be made up of long, segmented and branching mycelial threads. The tissue, stained with hematoxylin and eosin, reveals striking and characteristic changes in the rete, which is the seat of extensive hyperplasia, sending processes deep into the corium. These processes are irregular in shape and branch in all directions. They contain the miliary abscesses which are peculiar to this disease. At times these proliferations of the rete may suggest carcinoma, but it will be found, on close examination, that the structures resembling the whorls, or pearls, of the cancer, are but the rete cells around the beginning abscess. These abscesses may be very small, containing but a few leucocytes; then, again, they may

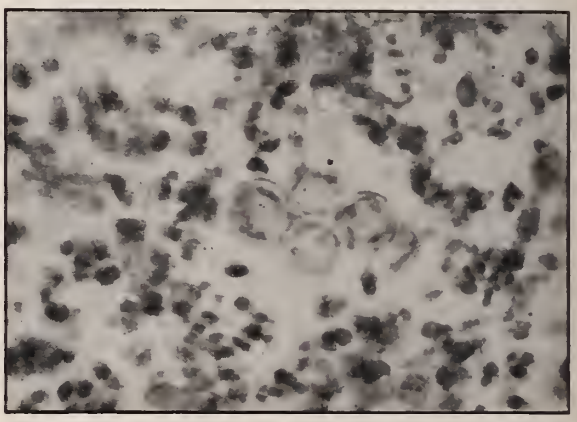

Fig. 3.—Blastomycosis. Organism in tissue. High magnificiation.

be large enough to be seen with the unaided eye. Giant cells are fairly common in the abscesses and may contain the fungus. Eosinophilic leucocytes are numerous.

The majority of the localized lesions do not endanger the life of the patient. The lesion may heal spontaneously. More or less scarring occurs. Systemic infection may follow the local lesion.

The best results of treatment follow the administration of large doses of potassium iodide internally, and the application of the X-ray locally.

Report of Case

Patient, colored male, age 32 years, has always resided in Richmond, Va.

When first seen the patient had a large, elevated lesion on the right forearm. This was indurated and sharply defined. It began three months ago as a small papule, which devel-

oped slowly. Between the papillae there was a small exudation of pus, dried into a yellow crust. The lesion was painless, the top somewhat rounded and roughened with warty projections of a purplish color. Enlargement of the axillary and epitrochlear glands was noted.

Following the biospy, cultures were started from the pus in the tissue. Sections stained with hematoxylin and eosin were examined. These showed the characteristic histopathology, as well as the fungus.

The treatment described above was instituted. About a week later healing of the lesion became readily apparent. As the patient's visits to the dispensary ceased, no further data on the progress of the disease are available.

THE PRACTICAL VALUE OF INFORMATION CONCERNING THE CEREBRO-SPINAL FLUID.*

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The cerebro-spinal fluid is one of the important biological systems which are routinely and so commonly being examined at bedside together with other humoral substances of the organism. It would not perhaps be amiss to pass in review some of our knowledge of the subject and submit it to some criticism with the object of finding out which particular findings may or may not be utilized for diagnosis of various diseases.

First of all, let us consider very briefly the few physiological data on the subject. Is there any relationship between the blood plasma and the cerebro-spinal fluid, and, if so, in what respect? When an intravenous injection of an hypertonic solution of glucose or of sodium chlorid is done, the tension of the cerebro-spinal fluid is lowered. If distilled water is injected intravenously, the tension of that fluid is raised. This experiment seems to demonstrate therefore the existence of an osmotic balance between the cerebro-spinal fluid and the blood. If this is correct, the practical value of this information becomes evident. For example, in acute cases of cerebro-spinal hypotension following cranial traumatism or lumbar puncture, intravenous injection of distilled water is to be recommended. Also the injection of glucose becomes indicated prior to surgical intervention in cases of intracranial tumors. On the other hand, colloid substances or crystalloids of the plasma do not penetrate the cerebro-spinal fluid because of the capillary barrier. The latter protects normally the cerebro-spinal fluid against an invasion of foreign and noxious agents, permitting the passage of elements useful for the activity of nervous elements. Furthermore, that there exists a relationship between the two humoral substances is evident also from the clinical observation that pressure on the deep veins, or during the acts of coughing, sneezing, epileptic attacks, after ligature of jungular veins in thrombophlebitis of the lateral sinus, in cardiac decompensation, in mediastinal compression—in all these conditions there is an increase of tension in the cerebro-spinal fluid. A relationship of tension of the two humours has been observed to be in an actual correspondence between the cerebro-spinal tension and that of the retinal vessels. In addition to these data, it has been observed that, with exception of sodium chlorid which varies more in the cerebro-spinal fluid than in the blood serum, the range of variations of other substances is about equal or less than the range in the blood plasma. It is also true with regard to the total osmotic pressure. The conclusion one reaches is that there is an osmotic equilibrium and an approximately constant composition of both fluids.

The formation of the cerebro-spinal fluid is still a subject of controversy. The prevailing opinion, however, is that the choroid plexuses of the ventricles of the brain with their numerous intricate folds play the most important, if not the exclusive, part in the secretion of the fluid. Among various proofs in this direction one may cite the following case: A neuroma was removed from the eighth cranial nerve; subsequently a cyst developed at the site of the skull defect which communicated with the ventricles. When irradiation of the choroid plexuses was done, the oozing of the cerebro-spinal fluid ceased. The function of the choroid plexuses through its epithelial linings is therefore seemingly chiefly secretory and maintains the intracranial tension.

Besides the problems of secretion, of tension, of the osmotic relationship of the blood plasma and the cerebro-spinal fluid, there is also a problem of whether or not the latter circulates. Here, again, we are on controversial grounds. Experiments with coloring sub-

*Read at the February meeting of the South-East Branch of the Philadelphia County Medical Society.

stances in the hands of some investigators have shown that there is no true circulation. However, this point is not totally settled.

Having these few physiological points in mind, let us now turn our attention to the practical aspects of our knowledge concerning the physico-chemical properties of the cerebrospinal fluid. Among all chemical tests the quantitative protein determination is of preeminent value. The average normal protein content is about 15 to 40 milligrams per 100 c.c. The globulin and albumin are apparently derived from the blood plasma. The amount of the latter is greater than that of the first. Excess of globulin is frequently found in chronic syphilis of the meninges, but of greater practical value is the absence of globulin, and this is almost an absolutely certain indication for a non-syphilitic affection. In epidemic encephalitis it is well to remember that globulin is always increased. In Infantile paralysis total protein is increased and albumin is excessive. The same increase we find in tetanus and hydrophobia. It is interesting to observe that in malaria there is a marked increase of albumin which is being maintained even with the administration of high doses of quinine. Protein is increased in cranial injuries without fractures, also in brain tumors and, finally, in sciatica. It is therefore evident that the information concerning the protein content is of practical value.

The knowledge of the cytology of the cerebro-spinal fluid is of equal importance. First of all, a normal fluid contains two or three lymphocytes, but no polynuclears. This can be determined if counting is done immediately upon the withdrawal of the spinal fluid. If counting is postponed, cytolysis will take place. The latter may be prevented if two drops of glacial acetic acid is added. There are various affections in the course of which the number of cells is increased, which fact is of value in diagnosis. For example, in tubercular meningitis there is 80% lymphocytes. In encephalitis lymphocytosis is present in the beginning, but a gradual decrease takes place coincident with general improvement. Infantile paralysis in its preparalytic stage presents a pleocytosis of 50% of multi-lobed cells. In the first day or two of the actual paralytic state there is a mononucleosis of 90%. The frequency of this cellular condition is so great that the latter becomes almost definitely diagnostic of this disease. In cerebral hemorrhage, in cerebral thrombosis, there is increase of polymorphonuclear cells during the first ten days, but they gradually disappear. Sometimes in spite of severe lesions of the central nervous system there are but slight changes in the cell count, such as in hydrophobia. Tetanus, also a highly infectious disease, shows no change in the cell count. In parasitic diseases of the brain, such as cysticercus, there is absence of lymphocytes, but presence of eosinophiles. In paresis there is great polymorphism of cells, but when treated with malaria there is great decrease of cells, so that, when remission sets in, the cytology becomes normal. When relapse occurs, the above formula reappears. The diagnostic importance of this phenomenon is self-evident. An interesting condition of the cytology is found in infections processes of the nervous system. In herpes zoster, for example, there is pleocytosis which sometimes exceeds 100.3. It gradually disappears as the inflammatory manifestations recede. In peripheral facial palsy, eight days after the onset, the cell count may reach as high as 236. In Landry's paralysis the cell count may reach the figure of 680. The value of systematic cytological examination can also be appreciated from a very recent observation, according to which tumor cells were found in the cerebro-spinal fluid in cases of tumors involving the ventricles, the surface of the brain and spinal cord, or originating in the meninges (*Ztschr. f. Gesam. Neur. u. Psych.*, 1930, p. 683).

The diagnostic value of protein contents and of the cellular contents is therefore of importance. At this juncture attention may be called to the interrelation between these two elements which has been recognized of equal diagnostic value. It has been observed that in certain pathological states there is a "dissociation" of the quantity of protein and the number of cells. This is the so-called "albumino-cytologic dissociation." Its presence is valuable in cerebral or medullary compression. In spinal cases the increase is more marked below than above the compression. In cerebral tumors the protein is also increased more in the cervical than in the lumbar region, more in the ventricles than in the lumbar region. The dissociation syndrome is so valuable that even an isolated increase of albumin in the fluid alters the mere suspicion of compression

of the spinal cord into a certainty. The same dissociation-phenomenon is found in radiculitis of the lumbo-sacral cord, in encephalitis, in toxic infectious diseases of the central nervous system, in cerebral softening. Increase of cells and decrease in protein are observed in aseptic meningitis. In infantile paralysis the increase of albumin is excessive and proportionate to the increase of cells. In sciatica there may be either hyperalbuminosis or hypercytosis. In high sciatica there is increase of albumin and low cell count, while in low sciatica there is no change. These few examples demonstrate the value of the albumino-cytologic dissociation.

There is another diagnostic phenomenon observed in the cerebro-spinal fluid which deserves our attention. This is the so-called Froin's syndrome. It consists of a yellow spinal fluid which coagulates upon standing. It is indicative of stagnation of the fluid caused by a constriction of the spinal subarachnoid space, due to a tumor, abscess or spinal meningo-myelitis.

The next chemical element of importance in diagnosis is sugar. The normal sugar content in the cerebro-spinal fluid is from 48 to 100 milligrams. Hyperglycorrhachia was observed in acute epidemic encephalitis, brain tumors, syphilitic meningitis, in meningeal complications of infectious diseases, such as scarlet fever, in edema of the brain, multiple sclerosis, diphtheritic paralysis, infantile paralysis, epilepsy, paresis, tetanus and strong emotional states. In all these affections there is probably an increase of permeability of the protective barrier of the choroidal epithelium.

On the first pages, it was mentioned that with great probability there is relationship between the chemical contents of the blood and those of the cerebro-spinal fluid. From a diagnostic standpoint the relationship of sugar is of considerable importance. It may be taken as proven that normally the concentration of sugar in the cerebro-spinal fluid is equal to a half of that in the blood and that variations in one correspond to variations in the other. In pathological states there is an interruption of the ratio equilibrium. For example, in tubercular meningitis the difference between the ratios is greater than in normal. Only slightly greater it is in serous and cerebrospinal meningitis.

Another important chemical element bearing a diagnostic value is sodium chlorid. The normal contents is 700 or 780 mg. per 100 c.c. of fluid. It seems that pathological kidney lesions have some influence on the ratio of NaCl in cerebro-spinal fluid. It is also well to remember that its content is greater than in the blood (570 mg.). The normal ratio of sugar of the cerebro-spinal fluid is observed in meningismus, syphilitic affections of the nervous system and in eclampsia. A reduction is observed in early periods of meningitis and is most pronounced in tubercular meningitis; it is about 0.59. Such a figure or below is almost pathognomonic of the disease. In this affection the fall is particularly observed in the early periods, but there is a rise in advanced stages. In pneumococcus meningitis there is a continuous decrease of the sugar content. The same is noticed in the meningococcal variety, except that there is a return to normal in favorable cases. While all these figures are not absolute, nevertheless, from the diagnostic point of view, it may be said that the ratio of below 670 mg. is pathognomonic of meningitis in general.

Calcium content of the cerebro-spinal fluid is, generally speaking, of no definite diagnostic value. However, in spinal compression it has a tendency to increase, while in tetany and arteriosclerosis it has a definite diminution. The normal ratio is 6 to 8 mg. to 100 c.c. of cerebro-spinal fluid. In tuberculosis there is an increase. An equal increase is observed in pathological conditions accompanied with meningeal reactions, especially in tubercular meningitis in which it reaches the maximum of 11 mg., the same ratio as in the blood. This rise is probably due to the passage of calcium from the blood stream, since it is well known that meningeal congestion of any nature is likely to increase the passage of various substances from blood into the fluid. Thus the distribution of calcium between blood and fluid may serve as a criterion of the permeability of the hemato-encephalic barrier.

Lactic acid in the cerebro-spinal fluid presents some interesting diagnostic features. In convulsive diseases there is an increase in the fluid and blood, but the ratio of lactic acid in the first is much greater than in the latter. Nephritis is also characterized by an increase of it in the fluid and plasma. Considerable increase is also observed in meningitis. Diabetic coma can be distinguished from uremic coma by a greater amount of acetone in the

cerebro-spinal fluid in the former affection. Small quantities of uric acid can be traced in the cerebro-spinal fluid. Normally there is 0.54 mg. in 100 c.c. In chorea there is an increase to 0.78; in syphilis there is a diminution to 0.40 mg. In infectious diseases and in uremia its ratio is increased. It is extremely interesting to know that iodide administered in neurosyphilis is found in the cerebro-spinal lues, hence the usefulness of its use as a therapeutic measure.

The cerebro-spinal fluid presents, besides the chemical contents and cytological characteristics, also some physical properties of diagnostic value. Normally it is limpid and clear. It is bloody in cerebral or spinal hemorrhages, and in traumatism of the cerebro-spinal axis. A distinction should be made between an accidental blood tinge and blood forming in the subarachnoid space. Blood from accidental punctures of the needle will be recognized by the clot formed in the fluid upon standing and by the return of the normal color upon centrifuging. Yellow color (xanthochromia) is observed in compression (cerebral or spinal). Blood remaining a long time in the cerebrospinal fluid eventually produces meningeal reactions and cortical changes; convulsive manifestations have been observed in such cases.

Bacteriogical examination of the cerebrospinal fluid in pathological states is specific for diagnostic purposes. Tubercle bacillus, spirochetae, meningococcus, pneumococcus have been the subject of important studies. The examination is either direct or by cultural methods. The search for tubercle bacilli has been undertaken by many observers. They all work on the velum or fibrinous clot formed upon standing. Spread on a slide and dried it may be either counterstained with picric acid solution, according to Lancelin, or a centrifuged specimen is injected into the peritoneum of a guinea-pig, according to Peterman. Levinson placed 1 c.c. of spinal fluid in each of two test tubes. In one is placed 1 c.c. of 1 per cent mercuric chlorid. In the other 1 c.c. sulphosalicylic acid. After being agitated, the tubes are left standing for twenty-four hours. This test yields a higher precipitate with the chlorid of mercury, which is pathognomonic of tuberculous meningitis. If the sulphosalicylic acid yields a higher precipitate, tuberculous meningitis can be excluded. A positive reaction is also obtained with the tryptophan-test recommended by Aiello. It has also been observed that the spinal fluid from cisternal puncture is more dependable for the bacteriological diagnosis of tubercular meningitis than that from lumbar puncture.

The presence of syphilitic spirochetae cannot be directly demonstrated in the cerebro-spinal fluid, but we are in possession of several important tests for determination of syphilis, namely, Wassermann, Kolmer, Kahn, Benjoin reaction by Guillain, mastic reaction, colloidal gold reaction, elixir of paregoric reaction by Tergowla, Takata-Ara reaction, and finally, the sigma reaction, which is more exact than the Wassermann, with cardiac extracts. It is interesting to know that in hydrophobia dogs whose cerebro-spinal fluid had been previously drained are less susceptible to contract the disease after an injection of rabies virus or antirabic serum.

Further valuable utilization of the cerebrospinal fluid for diagnostic purposes may be seen from the injections into the spinal canal of lipiodol in cases of blocking in the canal. This method occupies a very important place, as it enables one to determine with X-ray photographs the exact localization of the blocked area. Ventriculography and encephalography are highly valuable procedures as an aid to the clinical information to determine from the deviation or disfigurement of the cerebral ventricles the seat of compression in cases of doubtful neoplasms, aneurisms, cysts, etc.

Conclusion

The above enumeration of the chemical and physical properties, as well as the physiological knowledge so far obtained with regard to the cerebro-spinal fluid, indicate the fact that our information on the subject is far from being absolute. There are many controversial features concerning the relationship of this fluid to the blood plasma, namely, the question of whether or not the former is a dialysate of the latter. the question of maintaining the normal tension, the mechanism of hypertension or hypotension, the question of whether or not the cerebro-spinal fluid circulates. We have also seen that the increase or decrease of the chemical elements in various pathological conditions is not entirely absolute. The cell-count as well as their character also varies at different periods of the same disease. The determination of the bacteriological contents also presents at times great difficulties and uncer-

tainties. In spite of these negative features and absence of absolutely definite and complete information, we have nevertheless seen a multiplicity of positive and proven data concerning the physiology, physics and chemistry of this important humoral substance of our organism. In many instances it will render invaluable aid at bedside when we are confronted with obscure clinical symptoms. Of course, no one manifestation *per se* decides a diagnosis, but when all clinical data are correlated and still we are uncertain, the aid from the chemistry, physics, cytology, tension, and color of the cerebro-spinal fluid may yield valuable diagnostic information and in some instances decide the nature of the malady.

A few words concerning the procedure of obtaining the cerebro-spinal fluid will not be amiss. The old method of puncturing the third or fourth lumbar space below the conus medullaris is too well known to dwell upon. The puncture causes no prolonged pain or untoward symptoms in experienced hands. Although "puncture headache" may occasionally occur, it is not of a serious character and gradually disappears without any consequence. Lately, puncture of the cisterna magna has gained considerable grounds. It was pointed out that for bacteriological investigations the fluid obtained from sub-occipital puncture presents greater advantages over the fluid obtained from the lumbar route. In cases of partial or complete blockage of the spinal canal it is advantageous to use the combined puncture, cisternal and lumbar, for the purpose of observing changes in the pressure and tension. For ventriculograms some neuro-surgeons use only the cisternal routes to inject air. In cases of eclampsia the cisternal route had also proven to be more efficacious than the lumbar one of reducing the intracranial pressure.

Finally, it behooves us to bear in mind this important observation that in cases of brain tumors, especially when their seat is the base of the brain or in the cerebellum, withdrawals of large quantities of cerebro-spinal fluid may be followed by sudden or rapid death.

The subject discussed here presents not only a purely scientific interest, but also and especially a practical value. It is a very important aid alongside the clinical manifestations and in spite of many obscure points, it presents a sufficient amount of positive information.

1812 *Spruce Street.*

A PRELIMINARY REPORT ON THE USE OF ANTERIOR PITUITARY SUBSTANCE IN COMMON BALDNESS

THEODORE KOHN, B. S., M. D., Richmond, Va.

With the appearance of the article by Bengtson in the *Journal of the A. M. A.* of November 7, 1931, a great deal of interest has been aroused concerning the treatment of alopecia by means of pituitary therapy. Since reading the article, I have been treating a number of cases of baldness, which were selected at random, in an endeavor to prove to myself the efficacy of such a routine as treatment for the general types of alopecia seen by the practitioner. The majority of the cases treated and reported by Bengtson up to the present time have been those of alopecia areata and the type found in Froehlich's syndrome. Comparatively, these forms are infrequent, while recessive, premature and so-called constitutional baldness are seen at every turn. It has been my purpose to ascertain if this treatment is of any avail in the more common forms of progressive loss of hair, and also to see what, if any, is the association between baldness and the pituitary function of the individual. We are acquainted with many pathological conditions found in pituitary dysfunction, yet are unable to say whether common baldness is in any way associated with such dysfunction.

Following the suggestion of Bengtson, anterior pituitary preparations have been used exclusively on all cases. It will be recalled that the anterior lobe of the gland is formed from a ventral invagination and arises from ectoderm. This portion of the gland, according to endocrinologists, has to do with the development of hair and cutaneous appendages as well as the formation of sex characteristics, a phase of the subject in which we are not immediately interested.

My routine in all cases has been to administer intramuscularly 2 c.c. of the extract three times a week, and to have the patient take five grains of the anterior substance in compressed tablet form three times a day.

The possibility of undesirable and coincidental results with the continued use of pituitary substance in this type of case is a moot question, and to the best of my ability I shall relate the various reactions that I have observed along these lines. From its use I have not, up to the present time, seen any ill effects. It is true that in the beginning there is an occasional

complaint of dizziness, but it is assumed that this is essentially psychic, since frequent checks of the blood pressure at this time have failed to reveal any appreciable increase. During the course of the treatment the blood pressure has shown no deviation from normal after four or five months.

In the matter of weight there has not been anything conclusive. It so happens that none of the individuals treated were obese and the only observation is that they have remained at their original weight or have gained a small amount. In no one instance has this increase been over ten pounds. In short, the influence on weight has proven to be negligible.

In some instances, especially at the beginning of treatment, there has been noted a local reaction at the site of injection, exemplifying itself as tenderness or an erythema of varying degree. These reactions for a time proved rather disconcerting on account of the repeated doses. However, this disagreeable element was overcome by intramuscular rather than subcutaneous administration. Since using the former method there has been no complaint of other than transitory discomfort.

A frequently asked question is that concerning the influence of treatment on the growth of hair on other parts of the body. The patients report that to the best of their knowledge there has been a slight increase in growth of the body hair, but in no case has there occurred new hair where it was not previously found.

Sexually the drug has shown no demonstrable effect on those who are apparently normal in this regard. One of the younger patients, who is single, reports that he has more frequent nocturnal emissions than previously.

Basal metabolism checks on the majority of cases showed a variation that one would expect to find in a normal group. These readings were taken after several weeks of the treatment and the deduction is, therefore, that the thyroid gland was not influenced.

Specimens of urine on analysis have given negative results, which dissipates any anxiety as to the possibility of a glycosuria.

The individuals treated ranged in age from 22 to 57 years, with baldness varying in duration from the incipient stage to that of complete baldness for the past twenty-five years. It is true that the entire group has not been under treatment a sufficient length of time to give a fair assay of the value of the therapy and the information concerning results must be taken in the light of a preliminary report. Generally speaking, it is my opinion that the duration of baldness is in direct ratio to the amount of necessary treatment. In other words, those who are just beginning to show evidence of marked loss of hair respond more readily in that there is a rapid check in the progress of the baldness. In periods ranging from two to six weeks patients have reported that the hair has practically ceased falling out in appreciable amounts. This is not expected to imply that there is a cessation of the normal amount of loss. Accompanying results, such as an improvement in the texture and oiliness of the hair have been observed. In one instance the patient states that there has been marked improvement in seborrhea from which he had been suffering. The results in the group of early baldness have been very encouraging in that there has been a check in progression within two months as well as the occurrence of new hair after longer treatment.

The individuals with baldness of longer duration up to the present time have not shown anything conclusively, but, as previously stated, the period of treatment has not been sufficiently long. I am, however, of the reserved opinion that in several of this group there is evidence of new hair. A point brought out in the course of treatment is that the growth of hair does not occur over the entire denuded area at one time, but the lanugo arises from the existing hair line, and in this way gradually covers the bald spot; the first area showing baldness is therefore the last to become covered with hair. In one case where the basal metabolic rate was low, I added a small daily dose of thyroid extract to the routine treatment to see if this would create any acceleration of hair growth. This patient was not showing any results after two to three months of treatment, and even with the addition of this substance there is still doubt as to whether results are encouraging.

X-rays of the sella turcica have been made on all of the cases in an endeavor to see if there was any association between the size and contour of the bony structure and the existing baldness.

The films of the seven cases were examined and the results correlated. The findings as a whole are not considered to bear any definite relation to decrease in pituitary secretion. In two of the cases all of the findings were con-

Case	Age	Degree of Baldness	Duration of baldness in years.	Number of injections	Basal Rate	Results
I.—C. R. J...	22	Marked and progressive	2–3	52	+6	Cessation of falling hair with new growth.
II.—E. T.....	23	Slight	1–2	50	+1	No further loss; new hair.
III.—E. C.....	32	Slight	1–2	52	+7	No further loss; new hair.
IV.—N. P.....	44	Marked	8–9	51	—11	New hair.
V.—I. G.....	57	Complete	25–27	50	—2	Slight growth on sides.
VI.—L. O. W..	34	Marked	9–10	41	—16	No appreciable change.
VII.—H. G.....	28	Marked	4–5	31	—10	Cessation of falling hair.
VIII.—C. H.....	29	Marked	6–7	27		No change.

sidered typically normal in regard to the size of the fossa and general appearance of the head. In three cases there was a slight tendency toward the acromegalic or hyperpituitary type, but the findings in these cases did not vary sufficiently from the normal to definitely indicate such a type. In these cases the fossa measurements were somewhat increased, although in only one of them was the shape suggestive of such a type. In the case suggesting the hypopituitary type the fossa was small and shallow and there was a tendency to bridging between the clinoid processes. In the seventh case the fossa was large and deep, although the general appearance of the head was otherwise normal. We feel, therefore, as above indicated, that the present series of observations do not give us any constant findings in relation to the symptoms present.

In concluding, I might say that in beginning, or early baldness, pituitary therapy is definitely indicated and results may be expected within three or fourth months of continued treatment. These results may be classed as a stop in loss of hair, growth of new hair and improvement in texture and oiliness. In baldness of long standing, although there has been a growth of new hair, this has been exceedingly slow, and considering the time element the procedure is impractical.

2816 *Monument Avenue.*

Analyses, Selections, Etc.

Cannot Afford to be Sick.

Is it the merchant who is having the toughest time during the depression? Is it the banker, the jeweler, the insurance agent? Ask the physician before backing the hearse up at any other man's door. The doctor believes he has suffered more than any other skilled class, and the more he has specialized, the more he has lost. Some of the neurologists who operate sanatoria are wondering what luck they would have if they turned their hospitals into boarding houses, and other specialists are in a plight almost as distressful. Few are the patients, and those few are exceedingly slow pay.

Many persons, of course, are piling up trouble for the future by trying to economize in medical and dental service. It is unreckonably cheaper to go to the dentist every six months than to wait until one's teeth are half-ruined, and then to have to pay as much in trying to bring them back to usefulness as one would have to spend for three years' prophylaxis. The same is true of tonsils, of surgical operations and of medical care generally.

The picture is not altogether gloomy, though. Some people who have been nursing non-existent ailments have found they could get on without the coddling of doctors. Still others, who realized that they could not afford the expense of long illness, have been practicing personal hygiene as they never did before. By avoiding the common drinking cup and the dirty, half-washed glass in public places, by keeping better hours, by watching their diet, by shunning exhaustion and by treating the first symptoms of cold they have kept themselves well. It is quite likely that the lowered death rate of the country, which has been one of the most remarkable features of the depression, has been due to the practice of the sound economy of personal hygiene.—(*Richmond News Leader.*)

Presidents and Places of Meetings of the Medical Society of Virginia

President	Place of Meeting	Year of Meeting
*Dr. R. S. Payne, Lynchburg	Richmond	1870
*Dr. R. S. Payne, Lynchburg	Lynchburg	1871
*Dr. A. M. Fauntleroy, Staunton	Staunton	1872
*Dr. Harvey Black, Blacksburg	Norfolk	1873
*Dr. A G. Tebault, London Bridge	Abingdon	1874
*Dr. S. C. Gleaves, Wytheville	Richmond	1875
*Dr. F. D. Cunningham, Richmond	Charlottesville	1876
*Dr. J. L. Cabell, University	Petersburg	1877
*Dr. J. H. Claiborne, Petersburg	Richmond	1878
*Dr. L. S Joynes, Richmond	Alexandria	1879
*Dr. Henry Latham, Lynchburg	Danville	1880
*Dr. Hunter McGuire, Richmond	Old Point Comfort	1881
*Dr. G. W. Semple, Hampton	Fauquier White Sulphur Springs	1882
*Dr. W. D. Cooper, Morrisville	Rockbridge Alum Springs	1883
*Dr. J. E. Chancellor, Charlottesville	Rawley Springs	1884
*Dr. S. K. Jackson, Norfolk	Alleghany Springs	1885
*Dr. Rawley W. Martin, Chatham	Fredericksburg	1886
*Dr. Bedford Brown, Alexandria	Richmond	1887
*Dr. Benjamin Blackford, Lynchburg	Norfolk	1888
*Dr. E. W. Row, Orange C. H.	Roanoke	1889
*Dr. Oscar Wiley, Salem	Rockbridge Alum Springs	1890
*Dr. W. W. Parker, Richmond	Lynchburg	1891
*Dr. H. Grey Latham, Lynchburg	Alleghany Springs	1892
*Dr. Herbert M. Nash, Norfolk	Charlottesville	1893
*Dr. Wm. P. McGuire, Winchester	Richmond	1894
*Dr. Robt. J. Preston, Abingdon	Wytheville	1895
*Dr. Wm. L. Robinson, Danville	Rockbridge Alum Springs	1896
*Dr. Geo. Ben Johnston, Richmond	Hot Springs	1897
*Dr. Lewis E. Harvie, Danville	Virginia Beach	1898
*Dr. Jacob Michaux, Richmond	Richmond	1899
*Dr. Hugh T. Nelson, Charlottesville	Charlottesville	1900
*Dr. J. R. Gildersleeve, Tazewell	Lynchburg	1901
*Dr. R. S. Martin, Stuart	Newport News	1902
*Dr. J. N. Upshur, Richmond	Roanoke	1903
*Dr. Joseph A. Gale, Roanoke	Richmond	1904
*Dr. Wm. S. Christian, Urbanna	Norfolk	1905
Dr. Lomax Gwathmey, Norfolk	Charlottesville	1906
Dr. Paul B. Barringer, Charlottesville	Chase City	1907
Dr. Wm. F. Drewry, Petersburg	Richmond	1908
Dr. Stuart McGuire, Richmond	Roanoke	1909
*Dr. E. T. Brady, Abingdon	Norfolk	1910
*Dr. O. C. Wright, Jarratt	Richmond	1911
*Dr. Hugh M. Taylor, Richmond	Norfolk	1912
Dr. Southgate Leigh, Norfolk	Lynchburg	1913
*Dr. Stephen Harnsberger, Catlett	Washington, D. C.	1914
*Dr. Samuel Lile, Lynchburg	Richmond	1915
Dr. Joseph A. White, Richmond	Norfolk	1916
Dr. Geo. A. Stover, South Boston	Roanoke	1917
*Dr. E. G. Williams, Richmond. Owing to influenza epidemic and the World War, meeting was not held in 1918, and Dr. Williams held over as President	Richmond	1919
*Dr. Paulus A. Irving, Farmville	Petersburg	1920
Dr. Alfred L Gray, Richmond	Lynchburg	1921
*Dr. E. C. S. Taliaferro, Norfolk	Norfolk	1922
Dr. John Staige Davis, University	Roanoke	1923
*Dr. W. W. Chaffin, Pulaski	†Staunton	1924
Dr. Hunter H. McGuire, Winchester	Richmond	1925
Dr. W. L. Harris, Norfolk	Norfolk	1926
Dr. J. Shelton Horsley, Richmond	Petersburg	1927
Dr. J. W. Preston, Roanoke	Danville	1928
Dr. J. Bolling Jones, Petersburg	Charlottesville	1929
*Dr. Charles R. Grandy, Norfolk	Norfolk	1930
Dr. J. Allison Hodges, Richmond	Roanoke	1931
Dr. I. C. Harrison, Danville	Richmond	1932

*Deceased.

† In 1924, on account of Dr. Chaffin's illness, the first vice-president, Dr. H. H. McGuire, of Winchester, presided.

PRELIMINARY PROGRAM

MEDICAL SOCIETY OF VIRGINIA

Sixty-third Annual Session Richmond

NOVEMBER 1, 2 and 3, 1932

Headquarters: RICHMOND ACADEMY OF MEDICINE BUILDING

SCIENTIFIC PROGRAM
Tuesday, November 1, 1932
8:00 P. M.
Ball Room, John Marshall Hotel
Open to Profession and Public

Call to Order—J. Powell Williams, M. D., Chairman Committee of Arrangements.
Invocation—Rev. George E. Booker, D. D.
Address of Welcome—Hon. J. Fulmer Bright, Mayor of Richmond.
Announcements.
Address of President—I. C. Harrison, M. D., Danville.
Memorial Hour.
Address—Mrs. Walter Jackson Freeman, President, Woman's Auxiliary to the American Medical Association (*invited guest of the Woman's Auxiliary*), Philadelphia.
Address—The Most Generally Prevalent, the Most Inadequately Treated and the Most Easily Controlled Chronic Disease—Robert B. Osgood, M. D., (*invited guest*), Boston, Mass.
Address—A Third of a Century of Medical Education in the United States: A Critical Appreciation by a General Practitioner—William Minor Dabney, M. D., (*invited guest*), Baltimore, Md.

Wednesday, November 2
Richmond Academy Medicine Building
9:00 A. M.

Penetrating Wounds of the Thorax—I. A. Bigger, M D., Richmond.
Discussion to be opened by R. L. Payne, M. D., Norfolk.
Division of Pleural Adhesions in the Pneumothorax Treatment of Pulmonary Tuberculosis: Report of Ten Cases (*lantern slides*)—E. C. Drash, M. D., University, and O. N. Shelton, M. D., Sanatorium.
Discussion to be opened by Hugh Trout, M. D, Roanoke.
Tumors of the Ribs: Report of Case—C. Carroll Smith, M. D., Norfolk.
Discussion to be opened by C. L. Harrell, M. D., Norfolk.

Symposium Diseases of the Heart

(a) Etiology and Prevention of Heart Disease—J. Edwin Wood, Jr., M. D., University.
(b) Acute and Subacute Endocarditis—Walter B. Martin, M. D., Norfolk.
(c) Diagnosis and Treatment of Coronary Disease—George B. Lawson, M. D., Roanoke.
(d) The Use of Drugs in Heart Disease—William B. Porter, M. D., Richmond.
Discussion to be opened by Manfred Call, M. D., Richmond, and B. M. Randolph, M. D., Charlottesville.

Wednesday, 3:00 P. M.

A Comparative Study of Prostatectomy and Transurethral Resection of the Prostate—A. I. Dodson, M. D., Richmond.
Discussion to be opened by S. Beverly Cary, M. D., Roanoke.
The Treatment of Selected Cases of Encephalitis by a New Method—Beverley R. Tucker, M. D., Richmond.
Discussion to be opened by Frank H. Redwood, M. D., Norfolk.
A Routine Personality Study for Office Use—David C. Wilson, M. D., University.
Discussion to be opened by Beverley R. Tucker, M. D., Richmond.
Cancer of the Colon—J. Shelton Horsley, M. D., Richmond.
Discussion to be opened by Edwin P. Lehman, M. D., University.
Partial Resection of the Stomach for Ulcer—G. Paul LaRoque, M. D., Richmond.
Discussion to be opened by Hugh Trout, M. D., Roanoke.
Postoperative Tetany—J. M. Emmett, M. D., Clifton Forge.
Discussion to be opened by James H. Smith, M. D., Richmond.

Wednesday, 8:00 P. M.
Ball Room, John Marshall Hotel

The Year's Progress in Health Work Relating to the Medical Profession—Warren F. Draper, M. D., Richmond.
Discussion to be opened by W. O. Bailey, M. D., Leesburg.
Undulant Fever and Its Relation to Brucelliasis in Cattle and Swine in Virginia: Preliminary Report—L. E. Starr, D. V. M., Blacksburg, and Kenneth F. Maxcy, M. D., University.
Discussion to be opened by Henry B. Mulholland, M. D., University.
The Treatment of Malignant Neutropenia—Regena C. Beck, M. D., Richmond.
Discussion to be opened by William B. Porter, M. D., Richmond.
Some Results of Serum Therapy in Lobar Pneumonia—Charles P. Ryland, Jr., M. D, Binghamton, N. Y.
Discussion to be opened by Walter B. Martin, M. D., Norfolk.
Observations in the Management of One Hundred Foreign Bodies in the Air and Food Passages (*lantern slides*)—E. G. Gill, M. D., Roanoke.
Discussion to be opened by E. U. Wallerstein, M. D., Richmond.

Thursday, November 3
Richmond Academy Medicine Building
9:00 A. M.

A Non-Operative Treatment for Delayed Union in Tibia (*lantern slides*)—D. M. Faulkner, M. D., Richmond.
Discussion to be opened by J. T. Tucker, M. D., Richmond.
The Soft Parts and Joints in Fracture Cases—M. H. Todd, M. D., Norfolk.

Discussion to be opened by Foy Vann, M. D., Norfolk.

The Treatment of Fractures of the Os Calcis (*lantern slides*)—Robert V. Funsten, M. D., University.

Discussion to be opened by H. Page Mauck, M. D., Richmond.

Exophthalmic Goitre—R. DuVal Jones, Jr., M. D., Norfolk.

Discussion to be opened by Hugh Trout, M. D., Roanoke.

Neoplastic Diseases of the Skin and Mouth, with *lantern slide* Demonstration—Wright Clarkson, M. D., Petersburg.

Discussion to be opened by Fred M. Hodges, M. D., Richmond.

Subacute Bacterial Endocarditis Following the Extraction of Teeth—Douglas VanderHoof, M. D., Richmond.

Discussion to be opened by T. Dewey Davis, M. D., Richmond.

Endometriosis with Acute Intraperitoneal Symptoms (*lantern slides*)—J. Warren Sayre, M. D., Newport News.

Discussion to be opened by A. P. Jones, M. D., Roanoke.

Thursday, 3:00 P. M.

The Pharmacology of Digitalis—Harvey B. Haag, M. D., Richmond.

Discussion to be opened by D. C. Ashton, M. D., Richmond.

Pyelonephritis with Special Reference to Etiology—B. E. Harrell, M. D., Norfolk.

Discussion to be opened by John H. Neff, M. D., University.

Recent Progress in Prostatic Surgery—Donald S. Daniel, M. D., Richmond.

Discussion to be opened by Lawrence T. Price, M. D., Richmond.

Pollen Prevalences in Virginia: Review of a Six Year Survey—Warren T. Vaughan, M. D., and W. Randolph Graham, M. D., Richmond.

Discussion to be opened by J. B. Bullard, M. D., Richmond.

An Analysis of the First Year of the Work of the Allergic Clinic of the University of Virginia Hospital—Oscar Swineford, Jr., M. D., University.

Discussion to be opened by J. B. Bullard, M. D., Richmond.

Ulcerative Syphilitic Lesions of the Stomach—Lewis C. Pusch, M. D., Richmond.

Discussion to be opened by S. W. Budd, M. D., Richmond.

Special Order—Report from the House of Delegates

Induction of New President.

Adjournment.

ANNOUNCEMENTS

REGISTRATION AND INFORMATION BUREAU

Richmond Academy of Medicine Building, 1200 East Clay Street

Dues may be paid at Registrar's Desk. Please advise Registrar of any change of address.

SCIENTIFIC SESSIONS

Evening Sessions—Ball Room, John Marshall Hotel
Morning and Afternoon Sessions—Auditorium, Richmond Academy of Medicine Building

BUSINESS SESSIONS

Richmond Academy of Medicine Building

Council—Tuesday, November 1, at 11:00 A. M.

House of Delegates—First Session—Tuesday, November 1, at 4:00 P .M.

CLINICS

Tuesday, November 1, 2:00 to 5:00 P. M.

Special Clinic on **Arthritis**, by Dr. Robert B. Osgood, of Boston.

Other Clinics in **General Medicine, Surgery, Obstetrics and Pediatrics.**

SCIENTIFIC AND COMMERCIAL EXHIBITS

Library Building, Medical College of Virginia

GOLF TOURNAMENT

36-Hole, Medal Play Tournament, at Country Club of Virginia, beginning at 10:00 A. M., Tuesday, November 1. Club Handicap required. Chairman, Dr. Thomas W. Murrell, 17 East Grace Street, Richmond.

WOMAN'S AUXILIARY

John Marshall Hotel

The Virginia Pediatric Society will have its annual luncheon meeting on Wednesday, November 2, at Westmoreland Club, at 1:15 P. M. Guest speaker will be Prof. H. S. Jennings, of Johns Hopkins Hospital. Luncheon tickets are $1.00. Reservations should be made through Dr. N. Thos. Ennett, 1927 Hanover Avenue, Richmond.

Correspondence

An Appeal to Members of the State Society.

Dear Doctor:

I am writing to ask for your cooperation in a special effort to make our annual meeting in Richmond a success in every respect. This should be a real get-together meeting. Each Councilor, Delegate and officer should make an effort personally to invite by letter, phone or otherwise, as many as possible of his constituents to plan to attend the Richmond meeting. It will surprise us to see how much can be accomplished by a real effort of this kind. I am asking the officers of every component society to make an appeal to the members at their October meetings. We want 1,000 members at the Richmond meeting. They will be there if you will help.

The clinics alone will more than repay you for the trip.

Cordially and sincerely yours,

I. C. Harrison, M. D.,
President, Medical Society of Virginia.

Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
PRESIDENT-ELECT—*Mrs. W. P. McDowell*, Larchmont, Norfolk.
SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
TREASURER—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

Annual Auxiliary Meeting—November 1st, 2nd, and 3rd.

This will be the last call to the Convention. I urge all doctors' wives to come and make it the "biggest and best" Auxiliary meeting we have ever had. The Auxiliary has already proved its value to the medical profession and the community, and, if we have a united and enthusiastic group, we can accomplish great things. Our guest of honor will be Mrs. Walter Jackson Freeman, the President of the Auxiliary to the American Medical Association. We hope many women will be present to hear her inspiring message.

The hostess Auxiliary has arranged an interesting program and extends a cordial invitation to all doctors' wives, daughters, and mothers, whether or not members of the Auxiliary, to attend the Annual Meeting of the Auxiliary, November 1st, 2nd, and 3rd.

MARY GRAY HODGES,
President.

PROGRAM
Annual Meeting
November 1-3, 1932
Headquarters, John Marshall Hotel, Fifth and Franklin Streets

Tuesday, November 1st
Registration, 3:00 to 5:00 P. M. and 7:00 to 9:00 P. M., at John Marshall Hotel.

3:00 P. M.
Meeting of the Executive Board, on Mezzanine, John Marshall Hotel.

8:00 P. M.
Opening Meeting of the Medical Society of Virginia, in Ball Room, John Marshall Hotel.
Mrs. Walter Jackson Freeman, President of the Auxiliary to the American Medical Association, will be one of the speakers.

Wednesday, November 2nd
9:00 to 10:00 A. M.
Registration

10:00 A. M.
Annual Meeting of the Auxiliary, in Room No. 3, John Marshall Hotel
Call to order.
Invocation
Address of Welcome.
Response.
Minutes of last Annual Meeting.
Report of Board Meeting.
Report of Secretary.
Report of Treasurer.
Report of President.
Report of Delegate to American Medical Association.
Report of Delegate to Southern Medical Association.
Reports of Standing Committees:
- Health Education.
- Organization.
- Public Relations.
- Hygeia.
- Legislation.
- Historian.

Reports of Component Auxiliary Presidents.
Address by Mrs. Walter Jackson Freeman, President of the Auxiliary to the American Medical Association.
Greetings from President and Members of the Advisory Committee of the Medical Society of Virginia.

1:30 P. M.
Luncheon at Country Club.

3:00 to 5:00 P. M.
Sight Seeing Tour.

Thursday, November 3rd
10:00 A. M.
Keynote of Meeting: "Healthier Children for Our Nation."
Ten minutes given to each of the following subjects:
1. The Importance of Pre-School Examination—Miss Ellen Smith.
2. Correct Position, Lighting and Ventilation—Dr. Mary B. Baughman.
3. Wholesome Food in Proper Amount—Mrs. Wyndham B. Blanton.
4. Supervision of Recreational Activities—Miss McCarthy.
5. Mental Hygiene: "Role of Prevention in Behavior Problems"—Dr. D. C. Wilson, University of Virginia.

Informal Discussion.
Report of Nominating Committee.
Induction of New Officers.
Report of Courtesy Committee.
Adjournment.

3:00 P. M.
Card Party and Tea.

News From Other State Auxiliaries.

We wish to express our appreciation to Mrs. M. P. Overholser for the "News Letter" she sends out each month. These contain much valuable information and are most interesting and helpful.

The President of the Virginia Auxiliary wishes to take this means of expressing her personal thanks to Mrs. Overholser for the news of the other State Auxiliaries she has given us so regularly.

"THE GOLDEN RULE"

Missouri's 1931-32 Year Book carried the following word from her beloved, then National President, Mrs. Arthur B. McGlothlan:

"The Golden Rule may not say: Protect children against communicable diseases; take care of mothers in childbirth; secure pure milk and pure water; help humanity to adjust itself rather than increase crime, delinquency and dependency; take care of the child limping a little in the race, with a handicap—but when it says: 'Love your neighbor as yourself,' in modern times it means these things and because the Medical profession is doing these things and the Auxiliaries are helping to do them, I believe in the Auxiliary."

Educating a Doctor's Wife.

The California Auxiliary prize essay contest on "Educating a Doctor's Wife" closed some months ago. The first prize essay from the June *California and Western Medicine* is herewith submitted for the pleasure and profit of all readers: The author is Mrs. Emmet A. Pearson, Los Angeles, Calif.

Doctors' wives are assuredly made and not born, for it would be asking too much even of eugenics to produce an individual with the required set of unique inhibitions and reactions. Granted then that she is to be made, let us look into the educative processes that are to do the making. It might be well first to inquire as to when the education should begin, pre- or postmatrimonially, and lest there be any controversy on the subject, we shall consider as decisive the answer made by an eminent member of the medical profession when approached on this very point. Said he, "You'd better not educate them too much beforehand, or they'll never marry doctors!"

Thus we would suggest an institute for doctors' wives, conducted as part of the educational program of the Woman's Auxiliary. Membership on the teaching staff may be made honorary or punitive, as seems best in each Auxiliary. Entrance requirements need include no evidence of previous folly, save the statement that the applicant has married a duly licensed M. D. The fundamental courses to be required may be divided roughly into arts and sciences. Mathematics as such need have no place, because the application of even simple arithmetic to a doctor's income is discouraging, not to say impossible.

The *sine qua non* of the whole course should be the study of the art of discreet speech. This should be extensive and intensive, and must give instruction as to how to cope with the following typical questions:

1. "What sort of an operation did Mrs. Dash have?"
2. "What should be done for infantile paralysis?"
3. "Does Mrs. Blank's little boy have anything catching?"
4. "What does your husband charge?"

There should be illustrative material with specimens from life, and these should include: (a) The doctor's wife who relates the errors made by other men who have dealt with her husband's patients; and (b) The chatty one who mentions her husband's patients by name and ailment, with treatment outlined.

The other art course we suggest as essential would be the art of medical reading and pronunciation. All good doctors' wives should be able to read professional treatises with a look of comprehension, even of enjoyment. This may take some practice. Triumph and reward will come, however, with the ability to see nonchalantly an esoteric word like "gastroenterostomy!"

The required science courses would also be two in number—phonology and relativity. By the former we mean instruction in the science of dealing with that black imp so entrenched in the physician's household—the telephone. The doctor's wife must learn when to address it just politely, when cordially, when firmly and crisply. She must know the proper occasions for replying, "No. May I take a message for him?" and, "I'll get in touch with him," and, "The doctor is out and cannot be reached for hours!"

Relativity, as one might expect, would be an elusive, intricate course It would deal primarily with time, although space and distance would often be involved. For instance, the course should train the doctor's wife to estimate instantly the relationship between the time set for any social engagement and the relative number of minutes or hours due to elapse before the appearance of any given doctor. She must learn to judge from the standpoint of hostess, when she will have a number of doctors to consider, as well as from the standpoint of guest, when it is her responsibility to produce her own doctor at the appointed place, if possible before the hostess' patience has vanished entirely. There would be many other phases of this invaluable course.

Finally, we would suggest that there be no degrees granted. If ever a select Auxiliary committee perceives that any doctor's wife has forgotten what she learned, she should be returned for further instruction. Generally speaking, the course will take a lifetime, anyway.

Comments on Accepted Products

Oral Therapy in Congenital Syphilis.

The use of Stovarsol in congenital syphilis by pediatricians abroad induced Maxwell and Glaser to investigate the value of the therapy. The results achieved in ten cases are reported in full in the *Am. J. Dis. Child*, 43:1461-1489, June, 1932.

In four cases the Wassermann reactions were negative when treatment was begun, but as the parents were 4+ treatment was not delayed. These cases had remained negative over a period of thirteen months when reported. The other six cases had positive Wassermann reactions. Three were reversed after the first course of treatment, two at the end of the first rest period, and the other at the end of the second course of Stovarsol therapy. The results in these infants, all under one year of age when treatment was begun, are encouraging. Children over one year of age did not respond so readily.

Other advantageous features of Stovarsol therapy in congenital syphilis in infants and children as reported are: the remedy is administered by mouth, and the patients generally show improvement in appetite, general vigor and energy.

The authors believe that Stovarsol has a definite place in the treatment for congenital syphilis. Administration must always be under the direction of the physician as toxic symptoms may appear. In

the majority of cases these symptoms are evidently mild in character but occasionally they may be severe.

Stovarsol is a pentavalent arsenic preparation allied to arsphenamine in its chemical constitution. It is manufactured in this country by Messrs. Merck & Co., Inc., of Rahway, N. J.

Its Quick Action Prevents Deformities.

No antiricketic substance will straighten bones that have become misshapen as the result of rickets. But Mead's Viosterol in Oil 250 D can be depended upon to prevent ricketic deformities. This is not true of all antiricketic agents, many of which are so limited by tolerence or bulk that they cannot be given in quantities sufficient to arrest the ricketic process promptly, with the result that the bones are not adequately calcified to bear weight or muscle-pull and hence become deformed.

Truth About Medicine

In addition to the articles enumerated in our letter of July 30th, the following have been accepted:

Abbott Laboratories
- Haliver Oil with Viosterol 250 D—Abbott
  - Soluble Gelatin Capsules Haliver Oil with Viosterol 250 D—Abbott, 3 minims

Ciba Co., Inc.
- Solution Dial-Ciba with Urethane, Sterile Ampules, 1.1 c.c.
- Solution Dial-Ciba with Urethane, Sterile Ampules, 2.3 c.c.

Cutter Laboratory
- Normal Serum (From the Horse), 100 c c. bottle

Lederle Laboratories, Inc.
- Normal Horse Serum, 30 c.c. vial packages

National Drug Co.
- Tetanus Perfringens Antitoxin

Parke, Davis & Co.
- Liver Extract—P. D. & Co.
  - Vials Liver Extract—Parke, Davis & Co.
- Liver Extract, Intramuscular—P. D. & Co.
  - Glaseptic Ampoules Solution Liver Extract—P. D. & Co (Intramuscular)
- Parke-Davis Haliver Oil with Viosterol—250 D
  - Soluble Gelatin Capsules, Parke-Davis Haliver Oil with Viosterol—250 D, 3 minims

Smith, Kline & French Laboratories
- Pentnucleotide
  - Vials Pentnucleotide, 10 c.c.

The following articles have been exempted and included with the List of Articles and Brands Accepted by the Council But Not Described in N. N. R. (New and Non-official Remedies, 1932, p. 487):

Sharp & Dohme, Inc.
- Pollen Extracts Diagnostic—Mulford, zone test packages.

NEW AND NON-OFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Triphal.—A product consisting essentially of sodium aurothiobenzimidazole carboxylate with a small amount of a product of indefinite composition. Triphal contains from 44 to 47 per cent of gold. It is proposed for use as a gold salt in the treatment of lupus erythematosus. The product is supplied in 0 025 Gm. and 0.1 Gm. ampules. H. A. Metz Laboratories, Inc., New York.

Liver Meal.—A mixture containing desiccated beef liver 81 per cent, malted milk 18 per cent, and powdered cinnamon 1 per cent. Liver Meal is prepared to meet the need of a concentrated liver diet in a form that is palatable and convenient. Livermeal Corporation, Hoboken, N. J.

Scarlet Fever Streptococcus Antitoxin Refined and Concentrated (National).—A scarlet fever streptococcus antitoxin (New and Non-official Remedies, 1932, p 364), prepared by inoculating horses with scarlet fever streptococcus toxin and live virulent cultures of scarlet fever streptococci by license of the Scarlet Fever Committee, Inc. It is marketed in syringe packages of 2,000 units (Prophylactic dose); in syringe packages of 6,000 units (therapeutic dose); and in single 1 c.c. vial packages (for the diagnostic blanching test). National Drug Co., Philadelphia. (Jour. A. M. A., August 13, 1932, p. 562.)

FOODS

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

Squibb Vitavose (E. R. Squibb and Sons, New Brunswick, N. J.)—A powdered extract of malted wheat germ and U. S. P. malt; essentially maltose, dextrins and "starch intermediate products"; contains vitamins B and G in substantial quantities; packed in tins. It is claimed to be intended especially for the carbohydrate, food iron, and vitamins B and G supplement of milk for infants or malnourished adults and children, expectant and nursing mothers, invalids and convalescents.

Mead's Florena (Mead Johnson & Co., Evansville, Ind.)—A partially cooked and moderately baked patent wheat flour. It is claimed to be a partially dextrinized wheat flour for use in infant feeding, and to be especially indicated as a routine cereal diluent, in cases of sugar intolerance, as a base for "butter-flour mixtures," and for high starch feedings.

Squibb Dextro-Vitavose (E. R. Squibb & Sons, New Brunswick, N. J.)—A powdered mixture of dextrose and extract of malted wheat germ and U. S P. malt; essentially dextrose, maltose, dextrins and "starch intermediate products." Vitamin assay shows a content of vitamins B and G at least equal to thirty times and ten times, respectively, of that of equal weights of fresh raw whole milk. It is claimed to be intended particularly for the carbohydrate, and vitamins B and G supplement of milk for infants, and as a similar diet supplement for children and adults.

PROPAGANDA FOR REFORM

The Relative Efficiency of Vitamin D Preparations in Different Species.—The discovery of the antirachitic potency of viosterol (irradiated ergosterol) created the hope that the strength of each of the many specifics for the treatment of rickets could be simply expressed in terms of a pure chemical substance. Clinical experience soon revealed that various products of equivalent antirachitic potency, as judged by the rat test, possessed markedly different values for the treatment of infants. While the infant requires only twenty times as much cod liver oil as the rat, on the basis of equal weights, about sixty times as much viosterol is necessary. There is some evidence indicating that irradiated milk, or milk from cows fed irradiated yeast, is somewhat more efficient in the child than in the rat, when cod liver oil is the basis of comparison. To protect the average child from rickets, Hess and his collaborators find that about one liter of suitable activated milk, 15 c.c. of standard cod liver oil, or ten drops of viosterol is sufficient. In terms of rat units these quantities

are respectively 160, 200 and 830; that is, for each rat unit in the form of activated milk, 1.25 units as cod liver oil or 5.2 units as viosterol is required. Regardless of the cause, the differences in effectiveness of the antirachitic factor in various species can readily be compensated for by altering the dosage in accordance with experimental facts. The differences in pharmacologic activity, therefore, should not be construed as evidence purporting to discount the value of viosterol. (Jour. A. M. A., August 13, 1932, p. 565.)

Book Announcements

Pharmacology of the Medicinal Agents in Common Use. By STANLEY COULTER, Ph. D., Sc. D. Prepared Especially for Students of Medicine. Copyrighted by Eli Lilly and Company. 1932. Published by Eli Lilly & Company, Indianapolis, Ind. Flexible fabricoid binding, 254 pages, 3⅜ by 6 inches, green edges. Price, 50 cents per copy, postpaid.

The student of medicine will always find the large standard texts on pharmacology indispensable for critical study of the actions and uses of drugs. These texts, however, are in many instances so voluminous that they are not available for ready reference or for study in spare moments.

Heretofore there has been no comprehensive, small-size work on pharmacology. To meet this need Dr. Stanley Coulter, Dean Emeritus of the Purdue University School of Science, spent over three years in the preparation of a compact treatise on the pharmacology of the drugs now in common use by the medical profession. In this work he had the cooperation of members of the medical and research staffs of the Lilly Laboratories.

The subjects are alphabetically arranged for quick reference. Under each title there is a terse statement of the constituents of the drug, its physiological action, dosage, and brief mention of its more important therapeutic uses.

This Pharmacology is prepared with special attention to the needs of the medical student. The main part of the text dealing with individual drugs is followed by an appendix of tables and miscellaneous information useful to the medical student. In no sense is this book intended to supplant the larger standard texts on pharmacology. On the other hand, it is the hope of its author and the publishers that the use of the pocket-size book will so intrigue the student in the subject that he will be led to closer studies of the great authorities on pharmacology.

The Sputum. Its Examination and Clinical Significance. By RANDALL CLIFFORD, M. D., Associate in Medicine, Peter Bent Brigham Hospital; Assistant in Medicine, Harvard Medical School; Formerly Associate Physician and Director of Pulmonary Clinic, Massachusetts General Hospital. New York. The Macmillan Company. 1932. Octavo of 167-xix pages. Illustrated. Cloth. Price, $4.00.

Functional Disorders of the Large Intestine and Their Treatment. By JACOB BUCKSTEIN, M. D., Instructor in Gastrointestinal Roentgenology, Cornell University Medical College; Alimentary Tract Division, Roentgen Department, Bellevue Hospital, etc. Harper's Medical Monographs. Harper and Brothers. New York and London. 1932. 12mo. of 265-xiv pages. With 60 Drawings in the Text and 40 Reproductions of Radiographs. Leatherette. Price, $3.00.

The Village of the Great Kivas on the Zuni Reservation, New Mexico. By FRANK H. H. ROBERTS, Jr. Smithsonian Institution. Bureau of American Ethnology. Bulletin 111. United States Government Printing Office. Washington. 1932. Octavo of 197-ix pages. Illustrated. Paper. For sale by the Superintendent of Documents.

Yuman and Yaqui Music. By FRANCES DENSMORE. Smithsonian Institution. Bureau of American Ethnology. Bulletin 110. United States Government Printing Office. Washington. 1932. Octavo of 216-xvii pages. Illustrated. Paper. For sale by the Superintendent of Documents.

A Dictionary of the Atakapa Language. Accompanied by Text Material. By ALBERT S. GATSCHET and JOHN R. SWANTON. Smithsonian Institution. Bureau of American Ethnology. Bulletin 108. United States Government Printing Office. Washington. 1932. Octavo of 181-v pages. Paper. For sale by the Superintendent of Documents.

A Dictionary of the Osage Language. By FRANCIS LA FLESCHE. Smithsonian Institution. Bureau of American Ethnology. Bulletin 109. United States Government Printing Office. Washington. 1932. Octavo of 406-v pages. Paper. For sale by the Superintendent of Documents.

The Swimmer Manuscript. Cherokee Sacred Formulas and Medicinal Prescriptions. By JAMES MOONEY. Revised, completed and edited by FRANS M. OLBRECHTS. Smithsonian Institution. Bureau of American Ethnology. Bulletin 99. United States Government Printing Office. Washington. 1932. Octavo of 319-xvii pages. Paper. For sale by the Superintendent of Documents.

The Failing Heart of Middle Life. The Myocardosis Syndrome, Coronary Thrombosis, and Angina Pectoris. With a Section upon The Medico-Legal Aspects of Sudden Death from Heart Disease. By ALBERT S. HYMAN, A. B., M. D., F. A. C. P., Cardiologist, Beth David and Manhattan General Hospitals; Attending Physician and Cardiologist, Hospital for the Aged, etc. And AARON E. PARSONNET, M. D., F. A. C. P., Attending Physician and Cardiologist, Newark Beth Israel Hospital; Cardiologist, Evening Heart Clinic, Newark Beth Israel Hospital, etc. With a Preface by DAVID RIESMAN, M. D., Sc. D., F. A. C. P., Professor of Clinical Medicine, University of Pennsylvania School of Medicine. Philadelphia. F. A. Davis Company. 1932. Octavo of 538-xx pages. With 166 Illustrations. Some in Colors. Cloth. Price, $5.00 net.

Virginia Medical Monthly

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Editorial

The Richmond Meeting.

The Richmond meeting of the Medical Society of Virginia is the sixty-third meeting of this organization. Sixty-two times the medical men of this State have gathered in annual session in order to bring about higher standards of service to the sick and to conserve and advance the great principles of medical practice, to fortify and increase the strength of the medical profession as a body of scientific men, and to batter down the far-flung strongholds of disease and to fend off the sweeping march of untimely death.

One may properly be a bit careful in selecting opportunities to attend meetings at all times. Especially in this time of economic depression one may rightfully maintain the point that there have been too many meetings, too many organizations, too many hours and too much money spent in sitting in on the medical meetings and gatherings. Much of this over-organization and much of this over-lapping of meetings may be changed by the demands of economy and in the wise employment of one's time. There necessarily comes in times like this to each organization a certain falling off of attendance and a certain loss of membership. By this process, unneeded and superfluous organizations will ultimately cease to function. But just as truly as there have been too many medical organizations calling and demanding attendance, there are certain organizations that have been and will be of the utmost importance to attend, support and maintain. The strength and power of these essential medical organizations are dependent upon the continued support of the medical profession, individually and collectively—in good times and in bad times. If the need for such support is more important under one or the other of these economic states, it is in bad times that certain medical organizations need to function more effectively, more forcefully and more successfully.

Now, the fundamental need of medical organizations rests in the local, state, and national medical societies. By no other group of interlocked agencies can the great voice of medicine speak with more telling effect. Comment need hardly be continued to point to the importance of the coming meeting of the Medical Society of Virginia, which meets in Richmond, November 1-3. Members of the Society are urged to make the sacrifice to come to this meeting. The program offers a reasonable variety of medical and surgical subjects in the form of formal papers. Members are urged to peruse the list of subjects to be presented, as they are listed in this journal, and to make preparation to enter into the discussion of the papers. Members may reasonably hope to find in the symposium that is to be presented by selected speakers a group of questions in medicine that will serve as food for thought and as a review of an important group of conditions daily confronting the general practitioner and other medical groups of men in practice. Invited guests will bring messages of importance to practitioners. Members may expect to receive information and profit from

addresses of these distinguished speakers. Clinics and demonstrations on Tuesday will offer another opportunity to practitioners to witness and take part in practical treatment of medical problems that may have real value in daily work.

In addition, members attending the sessions will have the privilege of sitting in the new building of the Richmond Academy of Medicine and the Library of the Medical College of Virginia, which also houses the office of the Medical Society of Virginia. This building is a credit to these organizations and reflects the high purposes in the breasts of those who put over this accomplishment. Here members of the Medical Society may find the welcome of an abiding house. Here the members may feel that they will receive a hospitable welcome on every occasion. Here one will find a medical library of the day and also may visit the museum of interesting historic medical publications and old prints—a collection contributed by Dr. Joseph L. Miller, of Thomas, W. Va.

Ultimate Results for Operations on the Biliary Tract.

The above title directs attention to information upon a subject in which the general practitioner is necessarily deeply interested. Not only is he interested but he is eager to be able to reach the best opinion upon ultimate values of all procedures in practice, especially those involving serious risks of failure of success, of human life, and needless medical costs to the patient.

With such mental eagerness, one may read Judd and Priestley* touching the subject of surgical risks and surgical success in nonmalignant biliary surgery. These operators working in a large clinic and enjoying opportunity of observing results in a large number of cases may be depended upon to reach reasonably accurate conclusions. Certainly such data as may be gathered under such conditions may serve as a measurement in evaluating surgical operations of unquestioned gravity. It should be further said that figures giving results of the Mayo Clinic represent results of the best sort in surgical practice. One may peruse this article to bring out experience of operations performed more than twenty years ago. As noted in all such figures, there may be missing links in the chain of statistical findings because of obvious defects in collection of data by questionnaires. Apparently every effort was made to secure reasonably accurate information. The data was culled from replies received from patients operated on at the Mayo Clinic for benign disease of the biliary tract in the years from 1907 to 1910, inclusive. From 1,652 inquiries, 606 usable replies were received. Of the 1,652 patients, 312 were dead in 1932—more than twenty-two years later. In 534 cases of cholecystitis with cholelithiasis, more than twenty years after operation, of the 376 having cholecystostomy 58.6 per cent were satisfactory, 24.4 per cent were unsatisfactory, and 17 per cent required reoperation; of the 100 having cholecystectomy 83 per cent were satisfactory and 17 per cent unsatisfactory; of the forty-three having choledochostomy and cholecystostomy 76.8 per cent were satisfactory, 16.3 per cent were unsatisfactory, and 6.9 per cent required reoperation; of fifteen cases of choledochostomy with or without cholecystectomy 86.6 per cent were satisfactory and 13.4 per cent were unsatisfactory. In seventy-two cases of cholecysitis without cholelithiasis, results reported more than twenty years after operation showed that in fifty cases of cholecystostomy 62 per cent were satisfactory, 26 per cent unsatisfactory, and 12 per cent required re-operations; in twenty-one cases of cholecystectomy 85.7 per cent were satisfactory, 14.3 per cent unsatisfactory; and one case of cholecystostomy and choledochostomy was 100 per cent satisfactory. These are very interesting figures and with a perusal of the article one may find much of interest in this retrospect in the surgical experience of more than twenty years ago.

In closing this comment, it is worthwhile to draw attention to the concluding paragraph of the article referred to. This directs attention to the experience in the matter of mortality in operations for chronic cholecystitis. At the Mayo Clinic during the year of 1931, cholecystectomy was performed in 579 cases of chronic cholecystitis with a mortality of 1.7 per cent.

Cholesterol of the Blood Plasma in Hepatic and Biliary Disease.

To probe the functions of the liver is a complicated schedule because the activities of the liver are varied and damage of one sort or another may have different standards of testing. This makes tests of liver functions uncertain. One may note with interest the summary of

*J. A. M. A., Vol. 99, No. 11, pg. 887.

Epstein's* observations on the cholesterol of the blood plasma in hepatic and biliary disease. The article is well worth reading. Epstein makes the point that improvement in accuracy of diagnosis and prognosis of various hepatic and biliary diseases is enhanced by means of a quantitative study of the blood cholesterol and cholesterol ester. The method is simple. It requires only 1 c.c. of the blood.

In obstructive jaundice, hypercholesteremia is found. According to Epstein, it roughly parallels the degree of obstruction. In degenerative diseases of the liver, a pronounced divergence between bilirubinemia and cholesteremia usually occurs—the more severe the damage to the liver the more the hypocholestemia. In atrophic cirrhosis of the liver (Laennec) cholesterol blood pictures remain normal and in cholecystitis and cholelithiasis with no obstruction, cholesterol figures are normal or insignificant.

Sir Ronald Ross.

Sir Ronald Ross is dead. He was one of the great benefactors of the human race.

For centuries on end, in tropical countries, in marshes and on the borders of tidal streams and sluggish currents of delta outlets of rivers, malarial fever had cursed the inhabitants. Few countries had suffered its dire blight more than Italy—especially noteworthy, historically, was its deadly effect in the Roman Campagna. The Southern States of America, especially along the swamps and low coastal areas also suffered. A geographical distribution of malaria would mark areas of swamp country the world over in Europe, Asia, Africa, Australia, and the Americas.

Virginia, with its tidal inlets and low country along its rivers suffered with malaria since the early days of the colonial settlements. The disease affected the economic and social well-being of its people. Malaria influenced the location of the settlements and determined the habitations of its people. Malaria influenced the movement of its business and commercial life. In Richmond, as in other locations, malaria changed the boundaries of the town and effected alterations in the site of residences. Malaria pushed cities back from the water's edge and from "miasmic" lowground to the hills. After twilight, malaria for centuries stalked its ghastly shape over the low country and sickened people with its chills and fevers and its chronic pathology.

*Epstein—Arch. Int. Med., August, 1932, pg. 203.

Ronald Ross knifed this prowling nocturnal, malevolent, jungle-born menace of health and happiness.

Laveran, in 1880, working in Algeria, had seen the living parasite under the miscroscope and had communicated his observations to the Paris Académie de Médicine. In 1885 Italian pathologists confirmed Laveran's studies and began to elaborate investigations on the life cycle of the malarial parasites in the human blood. Golgi, Marchiafarr, Celli and other Italians proved the fact that the periodical febrile paroxysm corresponds with the development of the organisms in human blood and, besides, they pointed out the different forms: tertian, quartan and malignant types. But the missing link in the chain was yet wanting—the mode of transmission and the life of the parasites outside of the human.

In 1894, by analogy, based on his experience in his discovery of the cause of filariasis, Sir Patrick Manson suggested the mosquito as the intermediate host. Following this suggestion, Major Ronald Ross, in 1895, found that "if a mosquito sucked blood containing the parasites they soon began to throw out flagella which broke away and became free." In 1898, Ross discovered peculiar pigment cells (aestivo-autumnal) within the stomach wall of the mosquitos which had been fed on malarial blood. Ross discovered that only mosquitos of the genus Anopheles had these cells and that they did not get them when feeding on healthy blood.

Ross, working on the problem in relation to the malaria of birds, found the life-history of malarial forms within the body of the mosquito. He watched with amazing scientific vision these forms increase in size in the body of the mosquito; he saw them divide and become filiform spores; he noted the rupture and the pouring out of the multitudinous progeny into the body of the mosquito; he beheld the foregathering of the numerous spores within the salivary glands and witnessed their passage down the salivary ducts and along the salivary groove of the mosquito into the punctured human body. Ross thus tracked the malarial parasite from malarial infected man through the body of the mosquito to man. Thus, eventually, with the vast amount of scientific studies subsequently made, one of the greatest medical discoveries of the ages was accomplished.

One of the confirmatory experiments was

conducted by Dr. Sanborn and Dr. Low. In 1900, acting under direction of the London School of Tropical Medicine, they resided in the most malarious district of Roman Campagna during the "height of the season." They lived there from July to October 19th in an especially constructed hut. The one precaution used was to confine themselves in the screened hut between sunset and sunrise. All escaped malaria while it was "raging" in the neighborhood. Mosquitos caught at that time were sent to London and produced malaria in persons who submitted themselves to the bite of these insects at the London School of Tropical Medicine.

In due course these revealing scientific facts, together with the use of quinine, enabled countries and regions long infested with the recurring plague of malaria to rid swamp and low-ground areas of mosquitos and has largely blotted out the malaria.

To this benefactor of mankind, Sir Ronald Ross, the medical profession in the State of Virginia may justly pay homage. For generations, malaria stigmatized Virginia and handicapped its people. But today, within the quarter of a century since the revelations of Ross and other workers in this disease, the State, along its water courses and low countries, is free of malaria. His memory may be rightly commemorated by this State. Ross' work was recognized by his native country. He was elected in 1901 fellow of the Royal Society; in 1911 he was knighted and many other honors were heaped upon him.

After five years of invalidism from paralysis, Sir Ronald Ross died in September, just as a fund was being collected by public subscription to protect him from poverty, to which he had drifted while doing scientific work.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Tenth Post-Graduate Clinic at University Hospital.

The regular fall clinic at the University of Virginia Hospital, to be held on Thursday and Friday, October 13th and 14th, offers the following program:

THURSDAY, OCTOBER 13, 1932

10:00 A. M.—Treatment of Varicose Veins, Dr. E. C. Drash
11:00 A. M.—Vaginal Hemorrhage---Dr. J. M. Nokes
2:00 P. M.—Problems Peculiar to Pediatrics, Dr. W. W. Waddell
3:00 P. M.—Ward Rounds

Evening Program, 8:00 P. M. Open Discussion
Topics to be submitted by guests

FRIDAY, OCTOBER 14, 1932

9:00 A. M.—Symposium on Headache:
Eye----------Dr. H. S. Hedges
Sinus---------Dr. F. D. Woodward
Neurological-------Dr. D. C. Wilson
Medical-------Dr. H. B. Mulholland
1:30 P. M.—Management of Fractures of the Wrist, Dr. R. V. Funston
3:00 P. M.—Ward Rounds.

Attendance upon the University clinics has been maintained at a level that demonstrates a genuine appreciation of this opportunity. During the ninth series of clinics in May sixty-nine physicians were registered. They came from forty-seven places, from Colonial Beach on salt water to Norton far in the mountains. Of course, every physician in Virginia is cordially invited to the clinic.

Another Flourishing Group of Prenatal and Postnatal Courses

The enrollment of seventy-five physicians for Dr. M. E. Lapham's second circuit of classes in prenatal and postnatal care constitutes an even more auspicious beginning than that of the first circuit. The result is a tribute to the energetic and enthusiastic efforts of local committees of leaders in each center. Not only in the matters of enrollment and attendance but also in respect to the supplying of necessary clinical material, almost the only point of criticism made by members of previous classes, the present groups are apparently more effectively organized; and the natural expectation is that beneficial results will be correspondingly increased.

Complete data on the five centers of the second circuit through the first three meetings follow:

FARMVILLE (Amelia, Appomattox, Buckingham, Charlotte, Cumberland, Goochland,

Lunenburg, Nottoway, Powhatan, and Prince Edward Counties)—Previously reported enrollments: Drs. J. R. Bailey, J. M. Habel, T. G. Hardy, T. E. Knight, Ray A. Moore, G. L. Morriss, J. Weldon Smith, Joseph H. Smith, W. E. Smith, C. S. Stone and J. P. Trent. Additional enrollments: Drs. J. B. Bailey, W. A. Brumfield, E. L. Kendig, W. D. Kendig, C. M. Nicholson, E. B. Nuckols, Dwight Rivers, Jack Spencer, P. E. Tucker and H. E. Whaley. Visiting physicians: Drs. J. F. Alsop, John A. B. Lowry, W. R. Martin, N. P. Snead and C. W. Tucker. Total enrollments, 21. Average attendance, 22. Percentage of attendance of those enrolled, 84.1.

Lawrenceville (Brunswick, Dinwiddie, Greenesville and Lunenburg Counties)—Previously reported enrollments: Drs. T. H. Anderson, F. N. Mallory, R. H. Manson, C. E. Martin, M. H. Tredway, J. B. Vaiden and T. H. Valentine. Additional enrollments: Drs. B. J. Atkinson, L. A. Law and G. M. Naff. Visiting physicians: Drs. W. C. Harmon and J. M. Dean. Total enrollments, 10. Average attendance, 9. Percentage of attendance of those enrolled, 80.0.

Ettrick (for colored physicians)—Previously reported enrollments: Drs. F. L. Brown, W. F. Clarke, J. B. Darden and W. B. Greene. Additional enrollments: Drs. E. B. Harris and U. S. McCoy. Visiting physicians: Drs. C. A. Robbins, G. H. Francis and H. A. Callis. Total enrollments, 6. Average attendance, 7.7. Percentage of attendance of those enrolled, 100.0.

Petersburg (Dinwiddie, Nottoway, Prince George, Surry and Sussex Counties)—Previously reported enrollments: Drs. Wright Clarkson, Joel Crawford, G. S. Fultz, S. E. Gunn, J. L. Hamner, J. H. Hargrave, R. T. Hawks, C. T. Jones, H. C. Jones, J. Bolling Jones, C. W. Lynn, Ruth S. Mason-Grigg, Randolph McCutcheon, M. F. McKinney, W. A. Reese and E. W. Young. Additional enrollments: Drs. T. G. Pretlow, J. E. Smith, H. M. Snead, W. C. Webb and F. J. Wright. Visiting physicians: Drs. P. L. Hill, Jr., F. M. Howell, W. P. Hoy, S. B. Perry, Mason Romaine, H. G. Stoneham and W. C. Carrarras. Total enrollments, 21. Average attendance, 20.0. Percentage of attendance of those enrolled, 73.0.

Richmond (Chesterfield, Hanover and Henrico Counties)—Previously reported enrollments: Drs. J. J. Anderson, B. B. Bagby, Greer Baughman, H. A. Bullock, R. S. Faris, J. B. Fisher and H. M. Richardson (jointly), Alexander McLeod, A. C. Monroe, W. H. Parker, A. E. Turman and J. W. Turman. Additional enrollments: Drs. Joseph Bear, M. L. Boyle, J. A. Gallant, P. D. Lipscomb, L. C. Lush and H. C. Rucker. Visiting physicians: Drs. R. D. Bates, E. C. Cobb, T. F. Gill, F. E. Hinchman, H. B. Hinchman, R. C. Hooker, V. L. Litsinger, Barney Plotnick, and J. K. Richardson. Total enrollments, 17. Average attendance, 26.0. Percentage of attendance of those enrolled, 82.3.

Geo. W. Eutsler,
Secretary.

Scheduled Meetings

Dr. Warren T. Vaughan, Chairman of the Program Committee, announces the following list of out-of-town speakers before The Richmond Academy of Medicine for the remainder of this year:

October 11th—Dr. Arthur F. Coca, Professor of Immunology, Cornell, "Some Recent Advances in the Practical Applications of Immunology."

October 25th—Dr. Joseph L. Miller, Professor of Medicine, University of Illinois, Graduate School of Medicine, "Pathology, Etiology and Treatment of Chronic Rheumatism."

November 22nd—Dr. Harlow Brooks, Emeritus Professor of Medicine, University and Bellvue Medical College, New York, "The Medicine of the American Indian."

December 13th—Dr. C. P. Howze, Washington, D. C., "Conservative Renal Surgery." Dr. Charles C. Haskell, New York, "Are Digitalis Preparations Stable?"

All meetings will be held in the Richmond Academy of Medicine Building, at 1200 East Clay Street.

Proceedings of Societies

The Augusta County Medical Association

Held its regular business and social meeting in Staunton, August the 3rd, at which time Drs. F. B. Coleman, of Stuarts Draft and G. Edmund Stone, of Staunton, were elected members. Delegate was named to the Richmond meeting of the State Society at this time.

In the election of officers for the ensuing year, Dr. Glenn C. Campbell, Staunton, was named president, and Dr. Horace T. Hawkins,

Waynesboro, Dr. J. L. Alexander, Staunton, and Dr. H. M. Wallace, Staunton, vice-presidents. Drs. W. F. Hartman, Swoope, and T. M. Parkins, Staunton, were re-elected secretary and treasurer, respectively.

The Mecklenburg County Medical Society

Held a splendid meeting at South Hill on September 8th. Interesting case reports of Acute Abdomen and Appendicitis were presented by Drs. W. W. Wilkinson, LaCrosse, and A. T. Finch, Chase City. Dr. C. V. Montgomery gave an interesting report of a case of Emphysema in a child. The discussions of these reports were timely and interesting.

The following officers were elected for 1933: President, Dr. W. L. Varn, South Hill; vice-president, Dr. L. H. Hoover, Clarksville; and secretary-treasurer, Dr. A. T. Finch (re-elected), Chase City. Dr. Norfleet Carter, Boydton, was elected alternate delegate to the Medical Society of Virginia, in the place of Dr. B. S. Yancey who had moved out of the county.

News Notes

Richmond Meeting of the State Society.

Everywhere throughout Virginia interest should be centering at this time in the sixty-third annual meeting of the Medical Society of Virginia in Richmond, November 1st, 2nd and 3rd. This is truly an anniversary meeting for it was in Richmond on November 2, 1870, that a body composed of ninety-two men met and organized the present society which has now grown to a membership of over 1,800. They threw the torch and we should keep faith with that earnest body of men. Make your plans to attend and help carry out the high ideals they had for the medical profession of this State.

A number of interesting clinics will be held for members on Tuesday afternoon, the feature clinic being the one on Arthritis by Dr. Robert B. Osgood, prominent orthopedic surgeon of Boston. Dr. William Minor Dabney, of Baltimore, is the other invited guest. Both he and Dr. Osgood will present papers at the general session of the Society on Tuesday evening, November 1st. The scientific and commercial exhibits will furnish much of interest and arrangements are being made to have all papers fully discussed so as to get all possible angles on the subjects to be considered.

We regret that not enough interest was manifested in the "Question Box" to justify the Program Committee in allotting time to such a feature.

The number of delegates already announced for the House of Delegates indicates that the business affairs of the Society will have a fair degree of attention.

The Council of the Society at its mid-winter meeting, in accepting the invitation of the Richmond Academy of Medicine to meet in Richmond, this year, did so with the recommendation that the members of the Society should take care of themselves in the matter of entertainment. For this reason, no public entertainments have been provided for the men other than a golf tournament, which is open to all members, this to be held on Tuesday, November the 1st.

The members of the Woman's Auxiliary of the local society are preparing to look after the visiting ladies and do what they can for their pleasure. All visiting ladies, whether or not members of the Auxiliary are invited to its meetings and the entertainments prepared for the ladies.

Delegates to Richmond Meeting.

Component societies which have not yet reported names of their delegates and alternates for the Richmond meeting of the Medical Society of Virginia are urged to send them at once to the Executive Secretary at 1200 East Clay Street, Richmond. We are anxious to have a full representation from all component societies in our House of Delegates.

The following is a list of delegates and alternates whose names have been reported to this time:

Delegate	Society	Alternate
	Accomac	
Dr. O. R. Fletcher		Dr. John W. Robertson
	Albemarle	
Dr. T. H. Daniel		Dr. D. C. Smith
Dr. Cuthbert Tunstall		Dr. W. W. Waddell, Jr.
	Alleghany-Bath	
Dr. R. A. Warren		Dr. M. B. Jarman
Dr. W. P. Gilmer		Dr. L. E. Hayes
	Amelia	
Dr. J. M. Habel		Dr. H. C. Rucker
	Augusta	
Dr. J. E. Womack		

Delegate	Society	Alternate
	Fairfax	
Dr. C. A. Ranson		Dr. Sigmund Newman
	Fauquier	
Dr. Richard Mason		Dr. Wade C. Payne
	Floyd	
Dr. J. M. Harman		Dr. F. C. Bedsaul
	Fredericksburg	
Dr. J. M. Holloway		Dr. R. J. Payne
Dr. L. F. Lee		Dr. H. W. Patton
Dr. Roderick Dew		Dr. Rogers N. Harris
Dr. W. A. Harris		Dr. A. M. Arritt
	Isle of Wight	
Dr. E. M. Easley		Dr. Rea Parker
	Lee	
Dr. G. B. Setzler		Dr. J. B. Muncy
	Lynchburg Academy	
Dr. D. P. Scott		Dr. D. M. Thomasson
Dr. H. B. Spencer		Dr. R. D. Caldwell
	Mecklenburg	
Dr. W. W. Wilkinson		Dr. G. Norfleet Carter
	Nelson	
Dr. D. C. Wills		Dr. F. M. Horsley
	Norfolk	
Dr. Jos. D. Collins		Dr. Julian L. Rawls
Dr. P. St. L. Moncure		Dr. M. S. Fitchett
Dr. W. P. McDowell		Dr. H. L. Myers
Dr. E. C. S. Taliaferro*		Dr. Claiborne Willcox
Dr. Walter B. Martin		Dr. F. H. Redwood
	Northampton	
Dr. John R. Hamilton		Dr. J. W. Jackson
	Northern Neck	
Dr. G. H. Steuart		Dr. H. J. Edmonds
Dr. W. B. Richardson		Dr. R. L. Hudnall
Dr. W. N. Chinn		Dr. E. T. Ames
Dr. B. A. Middleton		Dr. V. L. Litsinger
	Northern Virginia	
Dr. Allen T. Hawthorne		Dr. C. O. Dearmont
Dr. R. W. Stoneburner		Dr. P. W. Boyd
	Pittsylvania Co. and Danville	
Dr. P. W. Miles		Dr. W. W. Robertson
	Post-Graduate	
Dr. W. C. Harmon		Dr. F. N. Mallory
Dr. H. C. Jones		Dr. Meade Edmunds
Dr. B. J. Atkinson		Dr. G. M. Naff
Dr. W. W. Bennett		Dr. J. A. B. Lowry
Dr. D. L. Elder		Dr. J. M. Bailey
Dr. W. D. Kendig		Dr. H. E. Whaley
Dr. B. H. Knight		Dr. W. W. Seward
Dr. Joel Crawford		Dr. W. D. Prince
	Prince Edward	
Dr. Jos. H. Smith		Dr. Ray A. Moore
	Richmond Academy	
Dr. J. H. Smith		Dr. I. A. Bigger
Dr. R. F. Gayle		Dr. D. B. Cole
Dr. J. M. Hutcheson		Dr. A. I. Dodson
Dr. W. B. Blanton		Dr. C. Williams
Dr. W. H. Higgins		Dr. Joseph Geisinger
Dr. Dewey Davis		Dr. Randolph Anderson
Dr. St. Geo. Grinnan		Dr. T. D. Jones
Dr. Fred Hodges		Dr. A. C. Monroe
Dr. L. T. Price		Dr. H. R. Masters

*Has died since appointment.

Delegate	Society	Alternate
	Roanoke Academy	
Dr. T. J. Hughes		Dr. E. F. Flora
Dr. S. B. Cary		Dr. Frank A. Farmer
Dr. T. A. Kirk		Dr. L. D. Keyser
	Rockbridge	
Dr. F. L. Thurman		Dr. E. P. Tompkins
	Southampton	
Dr. R. H. Cobb		Dr. John W. Smith
	Southwestern	
Dr. L F. Cosby		Dr. S. H. Yokeley
Dr. T. K. McKee		Dr. A. B. Graybeal
Dr. E. M. Chitwood		Dr. C. F. Graham
Dr. R. H. Harrington		Dr. H. T. Smith
Dr. A. B. Woolwine		Dr. W. H. Hale
Dr. R. H. Woolling		Dr. W. R. Cushing
Dr. J. L. Early		Dr. A. M. Showalter
Dr. B. F. Eckles		Dr. W. R. Gardner
Dr. W. C. Caudill		Dr. M. C. Newton
	Tazewell	
Dr. Isaac Peirce		Dr. J. W. Shawver
	Wise	
Dr. F. S. Givens		Dr. J. B. Wolfe

Golf Tournament for Members of State Society.

On the first day of the annual meeting of the State Society, Tuesday, November 1st, there will be a Golf Tournament for members of the Society at the Country Club of Virginia. This will be a 36-hole Medal Play Tournament —18 holes to be played in the morning, starting at 10:00 A. M., and 18 holes in the afternoon, starting at 2:00 P. M. Players will be guests of the Richmond Academy of Medicine for lunch at the Club at 1:00 P. M. Appropriate trophies will be given for the low gross and low net scores and will be presented at the Public Meeting on Tuesday evening.

Those wishing to participate in the Tournament should send their names with Club Handicaps to Dr. Thomas W. Murrell, chairman of the Golf Committee, 17 East Grace Street, Richmond. Upon request, provision will be made for transportation to the Club. Other members of the Golf Committee are Drs. R. C. Bryan and Paul W. Howle.

Notice.

Dr. E. L. Kendig, Victoria, Va., has requested us to publish the following notice:

There will be a meeting of those present who are interested in forming an association of rural practitioners to cooperate with the State Society at Society Headquarters at noon on the first day of the meeting of the coming State Society. Those present will arrange for an organization meeting later during the session of the State Society and appoint such

committees as may be necessary for this purpose.

Notice of the organization meeting will be put on the bulletin.

The Virginia Pediatric Society

Will have its annual luncheon meeting on Wednesday, November 2nd, during the annual meeting of the Medical Society of Virginia. The luncheon will be at 1:15 P. M. at Westmoreland Club. Reservations for the luncheon, which will be $1.00 a plate, should be made through Dr. N. Thomas Ennett, chairman of the Program Committee, 1927 Hanover Ave., Richmond.

Professor H. S. Jennings, of Johns Hopkins Hospital, Baltimore, is the invited guest speaker for the luncheon. Professor Jennings is probably the foremost authority in this country on the influence of heredity. Medical men everywhere are interested in the newer knowledge as to hereditary influence and, as far as accommodations of the Club will permit, the privilege of hearing him will be extended members of the Medical Society of Virginia in general.

Dr. St. Geo. Grinnan and Dr. James B. Stone, both of Richmond, are president and secretary, respectively, of the State Pediatric Society.

The Southern Medical Association

Is to have its annual meeting in Birmingham, Ala., home of the Association, November 16th-18th. Judging by room reservations already made, there will be a record attendance, with representation from all parts of the United States. Dr. L. J. Moorman, Oklahoma City, is president, and Mr. C. P. Loranz, Birmingham, secretary-manager.

With the large number of sections of the Association and the affiliated societies which meet conjointly, there will be a varied enough program to satisfy the tastes of all. A warm welcome is extended to all members.

New Building of the Richmond Academy of Medicine Dedicated.

The dedication exercises incident to the formal opening of the Richmond Academy of Medicine Building and the Joseph L. Miller Library, at 1200 East Clay Street, Richmond, Va., were held on the evening of September the 20th. About two hundred doctors attended these exercises.

From 7:00 to 8:30 P. M., there was a dinner in honor of the invited guests and Dr. Joseph L. Miller, of Thomas, W. Va., donor of the Miller Library. This was in the banquet hall of the building. The members and guests then adjourned to the auditorium for the dedicatory exercises, Dr. R. Finley Gayle, Jr., president, presiding. After the invocation by Rev. J. J. Scherer, greetings were extended by Honorable John Garland Pollard, Governor of Virginia. Dr. Stuart McGuire, chairman gave a short report from the Building Committee. The feature addresses of the evening were "Libraries, the Storehouse for Human Experience" by Dr. Edward H. Cary, of Dallas, President of the American Medical Association, and "The Oldest Medical Library in the United States" by Dr. Francis R. Packard, of Philadelphia, Editor of *Annals of Medical History.*

During the evening, the handsome building, which has been most attractively furnished, was open to inspection. The Miller Library, with its unique collection of old medical prints and curios, is a work of art as, in fact, is the whole building.

St. Luke's Hospital Re-Opens its Obstetrical Department.

On July 1st, St. Luke's Hospital, Richmond, Va., re-opened its Obstetrical Department which has been closed since the death of Dr. Virginius Harrison, June 6, 1925. This has been done at the earnest insistence of many friends and patrons of St. Luke's, who had to go elsewhere for this service. The physical changes were effected by closing a hall of the north end of the main building with double doors which makes a distinct unit for this department cut off from the rest of the hospital. It consists of a delivery room, a sterilizing room and a nursery. These are all furnished with new modern equipment.

The department is under the immediate charge of Dr. H. Hudnall Ware. Consulting Obstetrician, who has inaugurated its technique and will supervise its professional management.

In re-establishing this department the hospital will be able to give personal training in obstetrics to its nurses who now go elsewhere for this part of their instruction.

New Medical Director of Schools.

Dr. Charles L. Outland was recently elected Medical Director of the Public Schools of Richmond and entered upon his duties about the middle of September. He succeeded Dr.

N. Thomas Ennett who did not apply for reappointment.

Dr. Outland is secretary of the Alumni Association of the Medical College of Virginia and is also well known in health circles, having been medical inspector for the Richmond City Health Bureau for the past six years and for sometime associate in Public Health at the Medical College of Virginia.

The American College of Surgeons

Will hold its twenty-second annual Clinical Congress in St. Louis, October 17th-21st, with headquarters at the Jefferson Hotel. Dr. Franklin H. Martin, Director-General of the College, informs us that an instructive program of operative clinics has been prepared by the local Committee on Arrangements of which Dr. Evarts A. Graham is Chairman.

Hospital standardization conferences under the direction of Dr. Malcolm T. MacEachern will be held during the first four days. Four special programs have been prepared dealing respectively with fractures, curability of cancer, industrial medicine and traumatic surgery, and the teaching of surgery and the surgical specialties. Medical motion pictures will be on daily exhibition.

On Monday evening the president, Dr. Allen B. Kanavel, will present his retiring address, "Intangibles in Surgery," and turn over the robes of office to the incoming president, Dr. J. Bentley Squier, who will deliver his inaugural address. "Fundamentals of Special ism." The John B. Muhphy oration in surgery entitled, "Pillars of Surgery," will be delivered by Sir William I. DeCourcy Wheeler, M. S., F. R. C. S. I., Dublin, Ireland.

On Wednesday evening a Community Health Meeting will be held with brief instructive talks dealing with personal health and hospital matters.

On Friday evening the convocation will be held for the incoming Fellows, and the Fellowship address on "Some New Things in Physics" will be delivered by Robert Andrews Millikan, Ph.D., LL.D., Sc.D., Nobel Laureate. Dr. J. Bentley Squier will deliver the presidential address entitled, "The American College of Surgeons—Twenty Years of Ambitious Effort."

Among the features of the evening meetings will be the oration on fractures by Dr. Philip D. Wilson and the oration on industrial medicine and traumatic surgery by Dr. Frederic A. Besley. A special program on ophthalmology and otorhinolaryngology will be held at the Statler Hotel and there will be clinics on these subjects during the entire week in the St. Louis hospitals.

Among the other foreign visitors will be Sir George Lenthal Cheatle, London, and Dr. José Goyanes, Madrid.

News Notes From the Medical College of Virginia.

The ninety-fifth session of the Medical College of Virginia formally opened at 12:00, Wednesday, September 14th. At the convocation exercises the four deans of the institution, the president of the student body, the secretary of the Y. M. C. A., treasurer of the college, and Dr. Stuart McGuire, chairman of the executive committee of the Board of Visitors, made brief remarks in greeting students. President Sanger presided.

Enrollment in the several schools is about normal for the current year. It was expected that the number of students in the first year of the new four year course in pharmacy would be less than usual. Enrollment last fall, which was the last of the three year course, was unusually large.

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Dr. Arthur Little has joined the staff of the school of dentistry of the Medical Colege of Virginia, succeeding Dr. Merrill G. Swenson as professor of prosthetic dentistry. Dr. Swenson has resigned to accept a position in New York University school of dentistry.

For the past five years Dr. Little has been doing research in his special field of dentistry. He has also read papers and given clinics in many parts of the country during this period.

Both in private practice and in the teaching of prosthetic dentistry Dr. Little has had wide experience. He is a graduate of the University of Minnesota college of dentistry. For a number of years he has been a resident of Pennsylvania and is licensed to practice dentistry there.

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A gain of practically 5,000 patients was noted in the dental infirmary last year. The number of patients handled for the fiscal year ending June 30, 1932, was 19,024 while for the same period of 1931, 14,193 visits were made to the infirmary. In addition to the dental services rendered in the infirmary the same services were also rendered in the three hospitals of the college. In these hospitals 2,386 patients, involving 3,524 operations, were cared for. The largest dental service was at St.

Philip's Hospital where 1,980 patients were treated during the year. In the children's dental clinic 3,197 visits were made and a total of 5,953 dental operations performed.

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An increase of more than 1,600 in the number of patient visits made to the out-patient department of the college was noted during the month of August in comparison with August of last year. During the month 5,499 visits were made to the clinic, the maximum number of patients treated in any one day being 267 and the minimum 136. Of the total number treated 41 per cent were white and 59 per cent colored, the percentage male and femal being fifty each.

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The new library of the college was ready for the use of the students at the opening of the session. Not only does the new library offer more complete facilities for study, but the basement has been given over to the college Y. M. C. A. for recreational activities. An adequate place for the Y. M. C. A. has been a very real need of the college for some time.

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Dr. A. C. Broders, an alumnus of the school of medicine, and pathologist at the Mayo Clinic, spent some time here during his vacation in looking over the work of the institution.

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Dr. T. M. Barber, Charleston, W. Va., a graduate in the class of 1917, visited the college recently. Dr. Barber was very pleased to see the progress the college had made since he was here.

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Dean Harry Bear of the school of dentistry attended the meeting of the American Dental Association, Buffalo. N. Y., September 13th to 16th.

Dr. and Mrs. Augustine Tucker

And their younger children sailed for China, the first of September, after a furlough of a year in this country. Dr. Tucker, who is an alumnus of the University of Virginia, Department of Medicine, is in charge of St. Luke's Hospital, at Shanghai, China.

American Board of Obstetrics and Gynecology to Hold Examinations.

The next written examination of the American Board of Obstetrics and Gynecology will be held on Saturday, October 22nd, at 2 P. M., in nineteen different cities of the United States and Canada. In order to reduce traveling expenses for candidates special arrangement may be made through the Secretary for taking the written examination at any city other than those regularly specified where there is a Diplomate who can be empowered to conduct the examination. This arrangement does not apply to the general, clinical examination.

The next general, oral and clinical examination, is to be held in conjunction with the meeting of the Pacific Coast Society of Obstetrics and Gynecology at Los Angeles, Calif., on December 7th, provided there are sufficient applicants.

The only reduction in railroad fares that will be available will be possible seasonal or round trip special rates. Information regarding this should be obtained from any railroad agent. The candidates will have the opportunity also of attending the scientific sessions of this Society, as the examination is scheduled for the day preceding the opening of the session.

Applications for these examinations should be filed immediately. Lists close for Group B applicants (see booklet) on October 5th, and for Group A applicants on November 15th.

For application blanks and other information, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pa.

Dr. R. J. Payne,

Fredericksburg, Va., entered upon his duties as mayor of that city, on September 1st.

Married.

Dr. Norman Walter File, Lynchburg, Va., and Miss Julia Blythe White, Alexandria, Va., in New York City, September 7th.

Dr. Charles Harold Spiggle, Strasburg, Va., and Miss Ann Margaret Chiles, July 20th.

Dr. Nathan Palmer Fitts, formerly of Markham, Va., but now of Williamsburg, Va., and Miss Lucille Branderberger, St. Louis, on July 12th.

Dr. Robert B. Cralle, Jr.,

An alumnus of the Medical College of Virginia in the class of '31, recently completed his interneship at the Memorial Hospital, Richmond, and has opened his office for general practice in his home town, Farmville, Va.

Dr. Harloe Bailey,

Who interned last year at the Iowa Methodist Hospital, has opened his office for gen-

eral practice in Tazewell, Va., Dr. Bailey received his degree in medicine from the University of Virginia in 1931.

Dr. Chester Stutsman,

Of the class of '31, University of Virginia, Department of Medicine, who interned last year at the Church Home and Infirmary in Baltimore, is now at Barnes Hospital, St. Louis.

The Southeastern Surgical Congress.

The attention of the medical profession is called to the announcement of the Fourth Annual Assembly of the Southeastern Surgical Congress which will be held in Atlanta, Ga., March 6, 7 and 8, 1933—three full days. BEGIN PLANS NOW TO ATTEND. The same high class program which characterized the second and third assemblies will be provided; also clinics will be conducted by some of the speakers. There will be an additional day to this Congress, with additional speakers.

For further information, write the executive secretary, Dr. B. T. Beasley, 1018 Doctors Building, Atlanta, Ga.

Dr. Gilbert O. Crank,

Who has been practicing for sometime at Lawton, W. Va., has located at Maurertown, Va. Dr. Crank is an alumnus of the Medical College of Virginia in the class of '16.

Dr. Warren T. Vaughan,

Richmond, Va., recently returned from Kalamazoo, Mich., where, by invitation, he gave several talks before the Michigan State Medical Society on Allergy. Dr. Vaughan recently addressed the Columbia, S. C., Medical Society also on a phase of this subject.

Dr. Roger L. Creekmur,

Richmond, Va., announces that he has moved his offices to 1100 West Franklin Street, this city.

Drs. Sexton and Dunkley Associated.

Dr. Roy Lyman Sexton, Washington, D. C., announces that Dr. Richard E. Dunkley will be associated with him in the practice of Internal Medicine. Their offices are at 1801 Eye Street, Northwest.

Dr. B. K. Weems,

Who graduated from the University of Virginia, Department of Medicine in 1931, and served his interneship at Elizabeth Buxton Hospital, Newport News, Va., the following year, has recently located in Waynesboro, Va., where he will be engaged in general practice.

Dr. A. P. Traynham,

Richmond, Va., has been reappointed coroner of Henrico County, for a term of four years beginning September 1st. This begins his third term in office. Dr. Traynham's position also carries with it the duties of jail physician.

Dr. A. T. Finch,

Chase City, Va., was recently installed as commander of the Hester-Bryant Post, No. 43, American Legion, at the meeting in that city.

Dr. D. Lane Elder

Has been elected mayor of Hopewell, Va., for a term of two years. Dr. Elder has served as mayor of Hopewell for ten years and as councilman for two additional years.

Dr. Tyler R. Boling,

Of the class of '31, Medical College of Virginia, has located for general practice at Burkes Garden, Va. He was stationed last year at the U. S. Marine Hospital, Norfolk, Va.

Mental Hygiene in California.

California had in its public schools more than 13,600 mentally retarded children at the time of a recent mental-hygiene survey. More than 5,700 of these had intelligence quotients below 70 and might be considered feeble-minded, according to the Bulletin of the California Conference of Social Work. Of thirty-eight school systems specially investigated during the survey, twenty-six provided special classes for the training of retarded children. The committee appointed by the State Department of Social Welfare to direct the survey recommended that every school system having more than ten children whose low intelligence makes them classroom problems, should appoint a specially trained teacher for the group, the State to give financial aid when the community resources are insufficient for the purpose. It also recommended the establishment of school clinics, vocational guidance work, and the employment of visiting teachers.

Hourly Nursing Service.

The Private Duty Nurses' Club, of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

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a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

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Obituary Record

Dr. Edwin M. Sneed,

Of Stafford C. H., Va., was found dead in a swampland ravine near Toano, Va., on September 13th. He had been visiting his son, Dr. A. M. Sneed, at Toano, and disappeared following a squirrel hunt on the 10th. Although over a hundred men searched the woods, his body was not found until the following Tuesday. Dr. Sneed was a native of Albemarle County and was seventy-six years of age. He had been a member of the Medical Society of Virginia for forty-two years. Dr. Sneed is survived by his wife, a daughter and two sons.

Dr. Lomax Plater Tayloe,

Vienna, Va., died at his home in that place September 12th and was buried in Arlington Cemetery. He was a native of Orange County, Va., and fifty-four years of age. After attending the University of Virginia, he studied medicine at the Medical College of Virginia, from which he obtained his medical degree in 1912. He had been a member of the Medical Society of Virginia for some years and served in the Medical Corps of the Army during the World War. He is survived by his wife, several sisters and a brother.

Dr. Junius Floyd Lynch,

At one time commander of the American Legion, Department of Virginia, died at his home in Norfolk, Va., September 15th, after having been in bad health for several months. Dr. Lynch was born in Alabama nearly sixty-seven years ago. He studied medicine at the Medical College of Virginia, from which he graduated in 1888. He located in Norfolk in 1896 and had since taken a prominent part in its medical circles. Dr. Lynch was the founder and first president of the Seaboard Medical Association of Virginia and North Carolina. He took a lively interest in military matters and had filled every grade from enlisted man to surgeon-general of Virginia, to which position he was appointed in 1910.

Dr. Lynch is survived by his second wife and a daughter by a former marriage.

Dr. Frank Billings,

Internationally famous surgeon and an ex-president of the American Medical Association, died at his home in Chicago, Ill., September 20th, after an illness of a few days. He was seventy-eight years of age and one of the most outstanding men in the medical profession. He was for a number of years professor of medicine at Rush Medical College of Chicago. Dr. Billings was also much interested in military affairs and gained the rank of Brigadier-General in the U. S. Army. He served with the American Expeditionary Forces in the provost general's office during the World War and in 1918 aided in organizing medical advisory boards for the U. S. Army.

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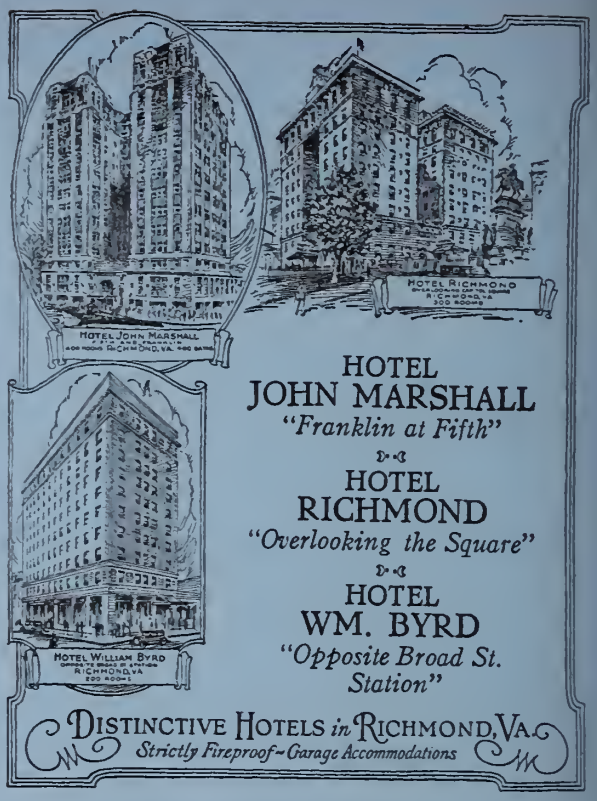

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SOME RECENT DEVELOPMENTS IN THE FIELD OF ENDOCRINOLOGY OF INTEREST TO THE GENERAL PRACTITIONER.*

THOMAS P. SPRUNT, M. D., Baltimore, Md.

There is no field in medicine just now that is the subject of so much active work and interest among physiologists, pharmacologists, anatomists, and experimentalists in general as that of the glands of internal secretion. We physicians are being constantly bombarded from all sides with literature on the subject, most of it coming from those who have something to sell. We are apt to fall into one of three groups; those who are over-enthusiastic in the use of glandular preparations, those who are without interest in the subject, and those occupying a middle ground who are interested but who are in a state of confusion as to what is good and what is bad. This last situation is more or less inevitable in the development of any very active and rapidly changing scientific field. It behooves us to take stock once in a while and to see how much the situation can be clarified.

I wish first to present briefly certain clinical pictures that have recently been identified as definitely associated with the endocrine glands and then to take up some of the more recent work in the isolation and use of active principles of some of the glands.

Clinical Syndromes

The clinical pictures that I have in mind are examples of over-activity of ductless glands and are frequently found associated with tumors of the gland in question. This is itself an interesting fact from the academic standpoint. Twenty years ago, we were accustomed to teach that tumors consisted of cells that were specializing in the function of growth at the expense of all other functions. The malignant tumors especially were thought to show this extraordinary power of growth with practically a total lack of the other functions of the cells from which the tumor originated. We now know that this is altogether incorrect and this newer knowledge has been gained chiefly from a study of these cases of endocrinopathies. We now know that even metastases from malignant tumors of endocrine glands can produce large amounts of material identical with, or closely similar to, that produced by the cells from which the tumor originally sprang.

The more recently recognized clinical syndromes of this type are associated with tumor growth or marked hypertrophy of the *parathyroid glands*, of the *Islands of Langerhans* in the pancreas, and with the *chromaffin tissue* or medullary tissue of the suprarenal glands.

Hyperparathyroidism.—Associated with this change in the parathyroid glands is a marked disturbance of calcium metabolism with high calcium and low phosphorus values in the blood serum, with rarefaction, fibrous growth, and cyst formation of the bones (the osteitis fibrosa cystica of von Recklinghausen) and the presence of metastatic areas of calcification in other tissues, as, for example, cartilages, arteries and tendons. Any widespread disease of the bones now calls for a study of the calcium metabolism with the parathyroid glands in mind. Removal of parathyroid tumors results in cure of the disease pictures associated with them.

Hyperinsulinism.—Tumors or marked hypertrophy of the Islands of Langerhans are associated with an over-production of insulin and attacks of spontaneous insulin shock when the patient has gone too long a time without food. Those of you who have seen examples of insulin shock in the treatment of diabetics would readily recognize the spontaneous type if the possibility of such an occurrence were kept in mind, for the attacks are in all respects similar. There is the state of mental confusion, of amnesia, of anxiety, with muscular tremors and sweating, paraesthesias, sometimes a negativistic state, sometimes screaming and shouting,

*Read before the Frederick County (Md.) Medical Society, June 20, 1932.

rarely convulsions, and rarely a totally unconscious state. Such episodes are at once cleared up by the intravenous administration of glucose or quickly relieved by eating an available carbohydrate. As long as the patient's food requirements are not excessive he can be made comfortable by the proper spacing of times of eating, but when this becomes difficult and the person's life is made miserable by the attacks or by the fear of them, an exploratory laparotomy is justifiable and, in a number of instances, the condition has been entirely cured by the removal of a small pancreatic tumor.

Hyperepinephrinism.—Tumors of the medulla of the suprarenal glands, or of the chromaffin tissue situated elsewhere in the retroperitoneal region, may be associated with attacks that suggest strongly the sudden outpouring of large quantities of epinephrin (adrenalin) into the blood stream. Here, as in the case of the pancreatic condition just described, the patient may be entirely normal between attacks. The attacks in the case of the chromaffin disturbance come on at first under conditions associated with some stress or excitement and rarely when the patient is quiet and comfortable in bed. One patient could bring on an attack at will by certain postures of the body. There is, during an attack, a rise in the pulse rate, a marked rise in blood pressure, tremors, flushing of the skin, sweating, marked feelings of nervousness, and palpitation. The most striking clinical feature is the paroxysmal arterial hypertension, the pressure rising to perhaps 250 over 110 or 115. The attacks may last for several hours.

The history in such cases and the attacks themselves are so characteristic that the diagnosis has been made even in the absence of a demonstrable retroperitoneal tumor, exploratory operation performed, and a tumor removed with complete cure of the condition. One or two patients that have refused operation seemed to be benefited by X-ray treatment. One such patient, after a period of improvement, later showed chronic and continuous arterial hypertension.

Although all three of these clinical pictures are rare in their occurrence, they are important because they are usually associated with a benign neoplasm of the gland involved, they can be exactly diagnosed in typical cases, and under favorable circumstances can be entirely cured by surgical operation.

Analogous conditions in other endocrine glands of tumors or hypertrophy associated with signs and symptoms of increased hormone production are, of course, well known. There are thyroid adenomata associated with hyperthyroidism; adenomata of the acidophilic cells of the anterior hypophysis resulting in acromegaly; adenomata of the basophilic cells of the hypophysis with peculiar sex disturbances; and tumors of the suprarenal cortex, again with queer sex disturbances. Certain rare tumors of the ovaries and of the testes have been described with disturbances of the incretions of these glands.

Potent Glandular Extracts

The discovery of insulin gave a great impetus to the study of extracts of the endocrine glands and to the chemical researches on their composition. This work has been very active in the past few years and the results very encouraging, so that now we may say that potent extracts of most of the important glandular structures have been made and their effects studied on the experimental animal. Thyroxin, the active portion of the thyroid protein (iodo-thyreo-globulin), insulin from the pancreas, and estrin from the Graafian follicles of the ovary, have been isolated and purified in crystalline form.

Potent extracts of other glands are so far known only by their physiological effects. Parathormone, obtained from the parathyroid glands, is of value in preventing the symptoms incident to the removal or lack of function of the parathyroid glands and, when injected in very large doses into animals, will produce a condition of bones similar to the osteitis fibrosa cystica. Insulin has, of course, been of the greatest value in diabetes and is very helpful also in overcoming malnutrition. Adrenalin, from the suprarenal medulla, and pituitrin from the posterior lobe of the hypophysis, have long been useful as drugs rather than as substitution products for glandular deficiency. Recently there has been obtained a potent extract of the cortex of the suprarenal gland that will keep alive and in good condition animals that have been completely suprarenalectomized. The early work in the treatment of Addison's disease with this extract leads one to hope that it will be of great value in the treatment of that disease. A preparation called eschatin has recently been placed on the market.

In the opinion of most conservative experimentalists and physicians, the thyroid products are still the only ones that have a practical potency when administered by mouth, although Collip claims that one of the hormones that he has isolated from the placenta is potent when given by mouth, and some of the German laboratory workers believe that the female sex hormones also have some efficacy when given in very large doses by mouth.

A great advance has been made, of course, when a useful extract has been obtained in the research laboratory and its potency demonstrated on the experimental animal. After this stage, however, there are still great difficulties before such an extract can be made commercially available. There are difficulties of manufacture on a large scale, difficulties of standardization and of stability of the product.

Hypophyseal and Sex Hormones.—One of the very most active and interesting fields of endocrine research during the past few years has been in that of the hypophyseal and sex hormones that have such an intimate relationship to each other. This work had its origin in the work of Evans and Long in California on the growth hormone and other hormones of the anterior lobe of the hypophysis and in the work of Allen and Doisy in the study of the follicular hormone of the ovary.

By means of implants of the anterior lobe of the hypophysis and of alkalin extracts of the anterior lobe, Evans was able to produce gigantism in rats, the giant reaching twice the size of the normal animal. In the course of this work he noted a marked effect also on the gonads of the animals and on the accessory genital structures including the tubes, the uterus, the vagina, and the mammary glands. These effects on the accessory organs of reproduction did not occur in the absence of the ovaries. Allen and Doisy had, in the meantime, demonstrated the effectiveness of the follicular extract in promoting the growth of the accessory organs of reproduction and in the production of oestrus in spayed female animals. Since then a tremendous number of contributions have been poured into the literature from all parts of the world.

It is now generally recognized that both the hypophysis (anterior lobe) and the ovary are necessary in the physiology of reproduction and that one is not effective in the absence of the other. There are at least two definite ovarian hormones; the one, variously named, estrin, folliculin, the female sex hormone, the oestrus-producing hormone, ovarian follicular hormone, theelin, menformen; and, second, progestin, the name given by Corner to a specific product of the corpus luteum and which is called lutin by Zondek and other German investigators. In brief, the follicular hormone stimulates the growth of the accessory organs of reproduction, and the progestin prepares the endometrium for the reception of the fertilized ovum and is necessary to the success of the early part of pregnancy.

It is uncertain whether there is only one anterior hypophyseal sex hormone or whether there are two or more, but at present it is rather generally accepted that there are two such sex stimulating hormones, called by the Germans prolan A and prolan B, and by the Americans by the more descriptive terms of the follicle-stimulating pituitary hormone and the luteinizing pituitary hormone. The first one stimulates the growth of the Graafian follicles and the mobilization of their hormone, folliculin or estrin, and the second stimulates the growth of lutein cells in the follicles, the formation of corpora lutea and the mobilization of progestin.

In view of the fact that most of these studies have been carried on with rats and with mice and of the difficulty or impossibility of interpreting human menstruation in terms of the oestrus of these rodents, it is not yet known just how these hormones serve in the physiology of the human reproductive cycle. It is evident, however, that each has its proper place in the picture and that when pregnancy occurs there is a tremendous outpouring of all of these hormones and they are found in the placenta, in the amniotic fluid, in the circulating blood, and in large amounts in the urine of pregnant women. The discovery of these facts has led to two important results for the clinician; first, it has given a very valuable and quite reliable test for pregnancy, and it has furnished a convenient source for the extraction of these hormones for clinical purposes.

Pregnancy Tests. — The Aschheim-Zondek test for pregnancy has met with world-wide approbation. Whether or not this material in the urine of pregnant women is really a hormone from the anterior lobe of the hypophysis, it is safe to say that the urine of pregnant human females, after about the third week, contains large quantities of substances resembling in their effects the gonad-stimulat-

ing hormones of the anterior lobe of the hypophysis. The Aschheim-Zondek test and Friedman's modification of it, or the rabbit ovulation test, are two different methods for obtaining evidence as to the presence or absence of the hormones in question in a given sample of urine. The former is performed by giving daily injections of the urine to immature mice; mice that would normally mature at the age of sixty days are chosen for the test when thirty days old. Four or five mice are used for each test and each one is injected daily with some of the urine for three or four days and at autopsy after five days the ovaries are examined directly for signs of stimulated growth and function. These are shown by the presence of ripened follicles, hemorrhagic follicles, and corpora lutea. The rabbit test of Friedman depends upon the fact that rabbits which (unlike most other mammals) do not normally mature and rupture their Graafian follicles except after copulation, may be made to ovulate without copulation by giving them an intravenous injection of the gonad-stimulating hormone as found in the hypophysis and in the urine of pregnant women. As detailed by Wilson and Corner the rabbit test is performed with ordinary voided specimens of urine that may be kept for some time stored in the ice box. Positive specimens remain active for many months so that they may be sent by mail from distant points. The test is begun by giving to a suitable rabbit, an adult female that has been kept in isolation for some time, an intravenous injection without sterile precautions of 5 c.c. of the urine. The injection is given into the ear vein of the rabbit, a very simple procedure, and is usually done at about 5:00 P. M. The next morning, at 9:00 A. M. or later, a laparotomy is done on the rabbit under ether anesthesia and with the usual surgical technique and the ovaries are examined for the recently erupted Graafian follicles that are obvious to experienced observers. After the observation the abdominal wound is closed with silk and the animal returned to isolation and subsequent use.

The test shows a very high degree of accuracy. Large series of cases have shown only 1 per cent to 3 per cent of errors. The test is positive as early as eight days after the first missed period. It remains positive throughout pregnancy and for twenty-four to seventy-two hours after pregnancy has terminated. It is positive in all cases where there is living fetal tissue in biological contact with the maternal blood. It is, therefore, a valuable and a practical method for the diagnosis of early pregnancy. It is useful in deciding between complete and incomplete abortion. It may be of considerable value as an aid in the diagnosis of extra-uterine pregnancy. It is useful in cases of missed abortion where the fetus has died but not been expelled.

The test is strongly positive in certain cases of abnormal pregnancies, notably in the presence of hydatidiform moles and in chorio-epitheliomas. In one case of hydatidiform mole the reaction was positive with 1/520 of a c.c. of urine. The test will remain positive as long as any portion of these tumors remains.

Hormonal Therapy.—The study of these hormones and the development of extracts containing them has naturally led to the attempt to see what may be accomplished in the treatment of menstrual disorders and other gynecological conditions. There are still difficulties in the standardization of the material, in questions of dosage and at times in the choice of the extract for use in a given case.

In regard to the female sex hormone, the follicular hormone, estrin, it would seem *a priori* that its chief use would be found in the treatment of menopausal symptoms, both artificial and natural, and such has thus far been the impression among those clinicians who have made the actual trials. Dodds, of England, has reported two patients whose ovaries had been removed and the uterus had been left untouched. After the intramuscular injections of estrin, menstruation appeared in three weeks and was followed by another period a month later. The injections were carried on for five months and the periods continued normally. Cessation of treatment, however, was followed by abrupt cessation of the menses. Such an objective result is, of course, of far more importance in evaluating the treatment than merely the subjective improvement of symptoms. It is said that the vasomotor and other symptoms can be satisfactorily controlled as well as the general symptoms of nervous irritability.

There are favorable reports also of the use of estrin in the treatment of hemophilia, the hereditary bleeder's disease.

Where there is potentially functional ovarian tissue in the body, as in the case of secondary amenorrhea, or hypomenorrhea, or delayed development with infantilism, the ma-

terial of choice would seem to be the ovary-stimulating substance so readily obtained from the urine of pregnant women. There is such a product now being marketed—called Antuitrin-S.

It is interesting that the first definitely successful therapeutic results with this substance have been obtained in another type of menstrual disorder, namely, the so-called functional uterine bleeding, particularly of young women, that is associated with hyperplasia of the endometrium. Successful series of cases have been reported by Novak, by Zondek and others. The most successful methods of treatment hitherto employed in these cases had been repeated curettage of the uterus and, in the more severe cases, the use of radium or X-rays. The latter method is particularly to be deplored in young women in whom menstruation and the reproductive function should not be impaired. It had been noted that, in abdominal operations on such cases, the ovaries might show many and large Graafian follicles but no appearance of corpora lutea. These and other data led to the belief that the condition was associated with an over-production of the follicular hormone and a lack of progestin, the hormone developed from the corpus luteum. In the absence of a satisfactory preparation of progestin for use in clinical cases, the trial was made with the luteinizing hormone from the urine of pregnant women on the hypothesis that luteinization would be established in the ovaries and consequently production and mobilization of the hormone, progestin. The results in many cases were astonishingly successful, but in some of these patients the cessation of bleeding occurred so promptly that time was hardly afforded for the formation of corpora lutea. In fact, in quite a number of the patients the bleeding stopped after the first injection.

Zondek was impressed by his observation that in abdominal operations upon women who had been receiving his Prolan, that is, the sex stimulating hormone obtained from the urine of pregnant women, the pelvic viscera showed very marked hyperaemia and increased local temperature. This led him to the use of Prolan in the treatment of chronic pelvic inflammatory conditions with, as he thought, favorable results. Similar favorable results were reported by another observer, repeating this work, but denied by still another one.

Since then Zondek has described his treatment of acute pelvic inflammation, particularly pelvic abscesses, that he regularly treats now by first puncturing and emptying the abscess and then beginning the injections of Prolan two or three days later, one ampoule of 100 rat units a day intramuscularly for ten or twelve days. He believes that the pelvic pains cease very soon under this treatment and that the hospital stay and the course of the illness is much shortened. Sometimes, he says, there is some bleeding from the uterus which usually stops of itself after a few days.

Naturally, with such potent materials available, the perennial question of rejuvenation presents itself. It seems, however, that we are not quite that near to the endocrine millennium. No claim has yet been made, as far as I am aware, that any extract will re-induce sexual activity in the senile. It is quite interesting, nevertheless, in this connection, that with implantation of anterior hypophyseal substance, something of this sort seems actually to have occurred. Evans, who is a very careful worker, states that implantation of anterior hypophyseal substance in the senile male rat causes a definite increase in sex activity and increase in weight of the accessory organs of reproduction. Hoffman further reports that anterior hypophyseal implant seems to be capable, not only of initiating ovarian function in immature mice, but also of re-establishing ovarian activity in old, menopausal mice. These hypophyseal implants, he says, apparently possess distinct stimulating properties by reason of the hormones which they contain. They do not continue to grow and produce additional hormones but their effect upon the activities of the ovaries seems to be continued even after their own activity has ceased. It is suggested by these experiments that old, non-oestrous mice, when once stimulated, can be kept sexually active for a considerable time without further stimulation. The anterior hypophyseal implant may act by mobilizing the latent residual hormones of the senile ovary. In one of the experimental animals, ovulation was restored and was succeeded by the gravid state. Hoffman makes the further statement that up to the present time no extract or other preparation of the anterior lobe of the hypophysis has been found which when injected or taken by mouth has the physiological effect of the gland implant.

There are favorable reports by Ehrhardt and Wiesbader on experiments with hypophyseal

implants in human beings. They obtained fresh anterior hypophyseal glands under sterile precautions and implanted them in the subcutaneous fat of the adductors of the thigh. In some cases of amenorrhea occurring in women upon whom various ovarian preparations had been used without effect, the menstrual periods were re-established.

In regard to determination of satisfactory dosage in the clinical use of extracts of the sex-stimulating hormone, not much has yet been accomplished. It has been noted, however, that when transfusions of blood have been made from a pregnant woman to a non-pregnant one, there is a passive transference of these sex-stimulating hormones to the blood of the recipient and that practically all of these hormones are excreted in the urine of the recipient within twenty-four hours after the transfusion. It begins to appear in the urine within ten or fifteen minutes after the transfusion. This would suggest that in the clinical use of the extract more satisfactory results may be expected from the use of small doses frequently repeated than from large doses at longer intervals.

It seems quite possible that before long materials comparable in their potency to those in use in research laboratories may be made available to the profession.

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BACTERIOLOGY AND TREATMENT OF RHEUMATOID ARTHRITIS.

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The treatment of rheumatic disabilities, in a tragically familiar metaphor, has been a game of medical football in which every known type of practitioner, charlatan and fakir has felt perfectly free to play. The great frequency of these conditions justifies the interest which the regular medical profession is just beginning to evince in them. In England, where there has been considerable study of rheumatism in its relation to industry, rheumatic diseases rank third in the list of causes for which industrial workers consult physicians. In 1927, at the Mayo Clinic, one out of every fourteen patients had one of the rheumatic diseases as a primary or secondary diagnosis.

From time immemorial the classification of arthritis has been confused. The classification of Nicholls and Richardson, based on pathological changes, has recently come into clinical use and has received favorable comment from Cecil and Archer, Pemberton, and others. This classification divides arthritis into two general groups, proliferative and degenerative.

Proliferative arthritis more often occurs in the young, though it may develop at any age. There are marked inflammatory changes in the synovial membrane and in the perichondrium, with swelling and later on, deformity and ankylosis of the affected joints. This group may be further subdivided according to the etiologic agent involved.

In degenerative arthritis, the cartilage and bone are soft and eroded in the primary stage of the disease, but undergo hypertrophy in the later stages. Degenerative arthritis may be subdivided into: (1) Cases occurring with and following menopause; (2) those of "metabolic"

origin, as in gout; (3) mono-articular arthritis following trauma; (4) senile arthritis; (5) arthropathies secondary to lesions of the central nervous system (syringomyelia), secondary to Charcot's disease, or secondary to certain lung conditions (pulmonary osteoarthropathy).

This paper will be limited to a discussion of that type of joint disease known as proliferative, "chronic infectious" or rheumatoid arthritis.

On physical examination, the patient presents a fairly typical picture. He is usually anemic with hemoglobin of 70 per cent or under. If the condition is of long standing, the patient often appears chronically ill and undernourished. On the other hand, if it is an early case, he may be well-nourished. The hands are usually cold and clammy and covered with perspiration. The characteristic, swollen finger joints have on palpation a peculiar doughy or rubber-like consistency, and in some instances the skin overlying the joint may become slightly bluish. The enlargement of the joint is due to the swelling and thickening of the synovial membrane and capsular ligaments. There is little, if any, pain on pressure, and only moderate pain on movement of the joint. In the larger joints, the signs of inflammation are more marked. There is more tenderness on pressure and more pain with movement, and there may be an effusion of fluid. Of all the large joints, the knees are the most frequently affected. In a well-established infection, the ankles, wrists, elbows, and shoulders are usually implicated. The hip joints usually escape until later in the disease. The intervertebral joints are frequently involved, particularly in the cervical and lumbar regions. The temporomaxillary joints are frequently affected.

General treatment should be based upon methods which not only help to make the patient comfortable and to prevent deformities but also build up his resistance against active infection. Non-specific protein therapy, milk injections, typhoid vaccine, etc., may at times stimulate antibodies and thereby increase tissue resistance and give temporary relief. Analgesics, not narcotics, should be given liberally for psycho-therapeutic effect and relief of pain. Thyroid extract may stimulate metabolism and give a sense of well-being in cases of subnormal metabolism. Patients with gastric subacidity, a frequent symptom in arthritis, may be benefited by hydrochloric acid. Arsenic and iron or liver extract may help anemia. Pemberton has shown that the delayed sugar-removal observed in arthritis can be restored to normal by the ingestion of vaso-dilators, such as sodium nitrite and similar drugs. Iodin in some form at times seems to make the patient more comfortable, and there have been several favorable reports from the use of ortho-iodoxy-benzoic acid.

The diet in rheumatoid arthritis should be adapted to the individual case. It is illogical to give the obese a high caloric diet or to give the under-nourished and anemic a low-protein, low carbohydrate diet. Whatever the diet, it should be rich in vitamin content.

Measures that improve circulation, increase metabolism, or encourage removal of waste products have a beneficial effect on the disease. Regular exercise, massage, heliotherapy and colonic irrigations are helpful, and orthopedic care is essential in many cases.

Due regard must, of course, be paid to the removal of foci of infection, though promises of relief must be conservative. The joint lesions are apparently the result of metastatic infection. Removal of a focus of infection does not always cure, as everyone knows. Rowntree and Adson have called attention to the effects of sympathetic ganglionectomy and ramisection with remarkable results in some cases. Though this procedure very evidently would not directly eliminate infection, it may alter tissue reaction against infection with the resulting removal of disability and deformity.

If the treatment of rheumatoid arthritis had to end with these familiar and briefly sketched measures, it would not always be very satisfying to the physician or helpful to the patient. We are, fortunately, not at the conclusion but at the point of departure of a new, and, as we believe, a better method of treatment.

Recent studies by numerous investigators, among whom may be mentioned Cecil, Rosenow, Hastings, Moon and Edwards, Clawson, Gray and Gowen, Kendall, Klugh, Kracke and Teasley, Margolis and Dorsey, and others, show what appears to be a very definite relationship between streptococcic and rheumatoid arthritis. As to the actual type of streptococcus causing this infection, there seems to be some difference of opinion. There are likewise reports of the finding of diphtheroid bacilli, reports too persistent to be disregarded. For example, Hadjopoulos and Burbank took blood cultures in one hundred and forty-five cases

of rheumatoid arthritis and report the finding of diphtheroid bacilli in eight cases. Moon and Edwards, Cecil, and others have called attention to the findings of diphtheroid bacilli as well as streptococci in blood cultures. The idea suggests itself that there may be in rheumatoid arthritis a condition analogous to pneumonia, where a fairly definite syndrome may result from one of several organisms. Pneumonia is usually caused by the pneumococcus, though other bacteria are occasionally responsible for the infection. Furthermore, there are distinct types of pneumococci, and the same type does not always predominate but may vary with the locality or season. The evidence submitted by Cecil and his associates indicates that chronic infectious arthritis is due usually to a specific streptococcus, but also, perhaps, at times to some other organism, particularly a diphtheroid. It is well known that the gonococcus may produce a chronic arthritis which cannot be differentiated clinically from the usual rheumatoid type of the disease.

My own interest in the subject was aroused chiefly by Cecil's work, in which he suggested a method of specific treatment, and in this paper I shall confine myself to a report of typical cases of rheumatoid arthritis as thus defined by him: "Cases of polyarthritis with swelling and often with some deformity and ankylosis of the joints affected. The patient, usually the neurotic type, gives a history of sudden or gradual development of pain, stiffness and swelling of several joints. He often dates the onset of his symptoms to some disturbances in his physical equilibrium, such as trauma and acute infection, exposure to cold, or surgical operation. Occasionally the onset of symptoms dates back to an attack of rheumatic fever. When the onset is sudden, the patient may run an irregular fever, varying from 99 to 101 degrees F., but, when the onset is insidious, the temperature usually remains normal. The disease is almost always migratory in its early stages, jumping from joint to joint much as in rheumatic fever. After several attacks, however, the joints chiefly affected become permanently injured and the process assumes a persistently chronic course."

In conjunction with Aubrey H. Straus, a method of examining blood cultures has been developed which was adapted from the method of Cecil and his associates, their method in turn having been adapted from Clawson. Briefly, 30 to 50 c.c. of blood is taken aseptically from the arm. Approximately 5 c.c. of this is inoculated in a bottle of infusion agar broth and the remainder placed in two sterile test tubes and allowed to clot. The next day each tube is centrifuged and the serum drawn off. The clot is then broken up with a blunt pipette. The fragments of clot are then drawn in the same pipette and inoculated into 50 c.c. of infusion broth. The risk of contamination is great, even with the utmost care, hence, the contents of each tube are put in a separate bottle so as to lessen the chance of loss. At the end of four or five days, unless growth is noted sooner, each culture is examined microscopically. This is repeated at similar inter-intervals for thirty days or more. If growth appears, blood agar plates are made and the culture further studied on suitable media.

By applying this method, one or more blood cultures were made from 138 patients with typical rheumatoid arthritis. All except six of the cases were ambulatory. With four exceptions, the patients were free from fever at the time cultures were taken. The ages of the patients varied from sixteen to seventy-eight years. The blood cultures of fifty-six of the series, or 40.6 per cent, were found positive. In thirty-nine of the positive cultures, an organism resembling the "typical strain" of streptococcus described by Cecil, Nicholls and Stainsby was found; in thirteen cases a gram-positive diplococcus was recovered. Cultures in which staphylococci were found were considered contaminated. The streptococci are small and gram positive, usually in short chains when first isolated. The chains become longer as the organism becomes better adapted to the medium. Marked pleomorphism is often present. The colonies on blood agar frequently show hemolysis and only occasionally a greenish color. There is often a brown tinge to the colonies on blood agar after two or three days. The original bottle in which the organism first appears often shows a brownish-green color just above the surface of the blood. The streptococcus grows best in subcultures in media to which serum or blood has been added.

The streptococci do not appear to be all the same. They often differ in their reaction toward the gram stain, some being more definitely gram positive than others. A few have shown hemolysis but most do not, even after long cultivation. Fermentation reactions are irregular. Most of them ferment dextrose, lactose, salicin and sucrose, but fail to ferment

mannite. Several ferment mannite but not sucrose, and others ferment all five of these sugars.

Mellon's work, in which he described the close relationship between diphtheroid bacilli and streptococci seemed to have a decided bearing on this work. Mellon's method was therefore employed and after persistent effort, successful results were obtained and many of the organisms considered diphtheroid bacilli at the time of their isolation assumed a true streptococcal form. It is entirely possible that the morphology of the organism as it is found in the blood cultures is dependent either upon some factor of resistance in the patient, as suggested by Koch and Mellon, or else upon some pecularity of the particular culture media employed.

Agglutination studies were not undertaken in my series of cases until October 30, 1930. In sixty-five cases of clinically typical rheumatoid arthritis. specific streptococcal agglutinins for Cecil, Nicholls and Stainsby's "typical strain" have been demonstrated in forty-eight, or 89.2 per cent of the series. Blood cultures have been taken from more than one hundred cases of degenerative or "hypertrophic" arthritis, all of which have been negative. and agglutination reactions have been persistently negative in these hypertrophic cases.

In the agglutination tests a live antigen is used. This is prepared from a twenty-four hour bouillon culture of the "typical" arthritic streptococcus, B-13, obtained from Cecil. The organism is grown in beef heart infusion medium and must be well diffused throughout. The patient's serum is run against this in dilutions from 1-20 to 1-10,240. The tubes are allowed to remain in the water bath at 56C. for two hours, and after standing in the refrigerator overnight, the test is read. A positive report is not given unless the serum agglutinates as far as the 1-320 dilution. The more positive sera often agglutinate several tubes further. As a live antigen is used, the test results may vary from day to day. A known positive serum and a negative are always used as controls. The test is also duplicated before the report is given.

If repeated cultures are taken from a typical case of rheumatoid arthritis after massage or exercise, the percentage of positive cultures will be much greater. When negative cultures are obtained, joints should be tapped or adjacent lymph glands removed for culture for the typical strain of streptococcus.

In all of the rheumatoid cases that yielded positive cultures, autogenous vaccines were prepared and were used in connection with other treatment. In preparing the vaccine, the streptococcus is grown in dextrose broth to which serum or ascitic fluid has been added. The cultures are centrifuged, washed in .9 per cent saline with .6 per cent phenol added as a preservative. The organisms are suspended again in the same solution. The density is adjusted to approximately one billion per c.c. for subcutaneous injection. This is diluted 1-1000 for intravenous injections. Injections are given at weekly intervals and begin with five hundred thousand killed organisms per injection. Reactions have been very rare and too mild for discussion.

I wish to cite two cases in which improvement after vaccine treatment was particularly marked:

Case 1.—White, female, aged 32 years, first seen March 23, 1927, complaining of acute pain in many joints. The onset of her illness was four years previously, with pain and swelling in the fourth toe of the right foot. The disease gradually affected the knees, hips, fingers, wrists, spine, and temporo-maxillary joints. She was fairly well-nourished, but had lost ten pounds in weight during this time.

Past History.—Typhoid fever in childhood and the usual childhood diseases; phlebitis of unknown origin one year previously.

Past Treatment. — Atophan, salicylates, physiotherapy, massage, baths. Tonsils, appendix, left ovarian cyst and several teeth removed. A great variety of diets; acidophilic milk for one year with elimination of raw milk and eggs. Daily administration of magnesium sulphate and streptococcus vaccine.

There was no relief and the disease continued to spread; a routine physical examination, including X-ray of teeth, sinuses, and gastrointestinal tract, was essentially normal, except for the swelling and pain in various joints.

Laboratory Examination. — Wassermann negative. Cultures of nose and throat and repeated stool cultures showed nothing abnormal. Urinary examination: 24-hour specimen normal. Blood chemistry: Sugar, 84 mg. per 100 c.c. Urea nitrogen 10 mg. per 100 c.c. Icterus index 6. Basal metabolism, minus 14. Red blood count 3,640,000; white blood count

5,400; hemoglobin 60 per cent; differential count normal. Temperature normal, as a rule.

A general diet rich in red meats, citrus fruits and green vegetables, without milk, was prescribed. Regular periods of rest; exercise; sun baths; massage and baking the joints; regulin, three teaspoonfuls with cooked fruit at supper-time for bowels; thyroid extract, 1 gr. twice daily; neocinchophen, gr. 10, as necessary for discomfort. Six injections of amydoxyl of 1 gram each were given at intervals of three days. The reactions were not marked, the maximum temperature being 102 degrees F. after injection.

For a period of four months she seemed considerably improved. Greater motion became possible in all joints and pain diminished. Soon after this, however, there was an exacerbation of the arthritis, during which a streptococcus viridans was isolated from the blood after four weeks incubation of the culture. An autogenous vaccine was made from the streptococcus, and has been given with occasional periods of rest ever since. She has gained six pounds in weight, and is now practically free from pain. The swelling of the joints has definitely diminished, her hemoglobin is 90 per cent, red blood count 4,600,000, and she is living a comparatively normal life.

Case 2.—White, female, aged 60 years, first seen April 24, 1929, complaining of acute pain in the joints of the left side of the body, particularly the left foot, left knee, left hip, fingers, wrist, elbow and shoulder joints. The onset of her illness was thirty years previously, with pain and swelling in the third and fourth toes of the left foot and gradually affected the left knee, hip, elbow, fingers, wrist and shoulder joint. For one year she had been practically bedridden.

Past History.—The usual infectious diseases of childhood; an operation for removal of fibroid of the uterus, left cystic ovary and appendix in 1915.

Past Treatment.—Atophan, aspirin, all sorts of intravenous injections, physiotherapy, extraction of all teeth and removal of tonsils. When first seen she was taking about 2 gr. of codein, 6 allonal tablets, and 6 aspirin tablets per day for relief of pain. All kinds of diets had been tried.

The disease had spread very insidiously until the left elbow was contracted practically at right angles and she was unable to close the left hand. Her temperature varied between 98.6 degrees F. and 100 degrees F. A complete physical examination revealed, in addition, to the arthritis, slight tenderness over the region of the colon, slight enlargement of the heart, moderate hypertension (blood pressure systolic 160, diastolic 110), and marked under-nutrition.

Laboratory Examination. — Wassermann negative. Stool cultures negative. Urinary examination negative except for three or four pus cells per high-power field in the catheterized specimen. Blood chemistry: Sugar 100 mg. per 100 c.c. Blood urea nitrogen 34 mg. per 100 c.c. Blood count: Hemoglobin 55 per cent, red blood count 3,200,000, white blood count 8,000, differential normal. Basal metabolism minus 8. Gastric analysis showed achylia.

A general diet rich in red meats, citrus fruits and green vegetables, with cream, one pint, every twenty-four hours, was prescribed, with Alpine therapy, massage and baking of joints, and colonic irrigations every other day; also thyroid extract, ½ grain twice daily, and a gradual withdrawal of codein, allonal and aspirin, substituting neocinchophen, gr. 10, as necessary for discomfort. Dilute hydrochloric acid, ½ dram, in orange-ade was sipped with meals. A long-chained non-hemolytic streptococcus was isolated by blood culture. After full dosage of the autogenous streptococcus vaccine was established, the patient began to be remarkably free from pain, and the joints were more readily movable. She has gained fifteen pounds in weight since first seen, goes up and down steps and out for short walks and automobile rides, and states that she is more comfortable than she has been for eight years. Her temperature has been normal for nine months. Her hemoglobin has increased to 65 per cent and her red blood count to 4,000,000.

It is hard, of course, to say just how much of the benefit obtained in these two cases is referable to the autogenous vaccine. However, when measures used in treatment of the patient's general condition (correction of metabolism, anemia, nervousness, treatment of the very frequent achylia, colonic irrigations, removal of foci of infection, administration of low carbohydrate or low purine diet, baking, massage, and vasodilators) have failed to give visible improvement, and when these measures are tried *together with* vaccine therapy, and arrest or cure of the disease occurs, it seems

probable that there is something more to vaccine treatment than psychotherapy. We suspect that the reason for the low percentage of positive blood cultures obtained in some quarters is the failure to select typical cases of rheumatoid arthritis as stressed by Cecil. If the condition in the joints is one of bacterial allergy, here, again, for cure we are dependent for best results upon specific densenitization against the offending organism. In my series of cases, the best results have been obtained from the intravenous administration of the streptococcus vaccine, which in many instances has produced almost immediate amelioration of symptoms of the rheumatoid condition.

Summary and Conclusions

1. In 138 cases of typical rheumatoid arthritis, blood cultures yielded streptococci in thirty-nine, or 28.2 per cent, of the series. In thirteen other cases, or 9.4 per cent, a gram-positive diplococcus was recovered from the blood stream.

2. Many of the streptococci recovered from the blood of arthritic patients were considered diphtheroid bacilli at the time when they were first isolated. Later, when cultivated under certain conditions, they took on the form of streptococci.

3. In sixty-five cases of clinically typical rheumatoid arthritis, specific streptococcal agglutinins were demonstrated in the patient's serum in forty-eight cases, or 89.2 per cent of the series.

4. Whenever possible, autogenous streptococcus vaccine is prepared and administered to the arthritic patient over a period of several months. Many patients show striking improvement under this treatment.

5. There is considerable evidence to support the theory that rheumatoid arthritis is a streptococcal infection, and that streptococcus vaccine has an important place in the modern therapy of this disease.

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HEMARTHROSIS.*

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The treatment for hemarthrosis as outlined in this paper is an original form of treatment as far as I have been able to determine by a review of the literature. This condition was at one time called "congealed blood in the joint." In the type of cases in which the hemorrhage was severe, disability was for a period of a year or more with a percentage of permanent disability. At one time these conditions were treated by the application of a

*Read before the Roanoke Academy of Medicine, April 4, 1932.

plaster cast; every few weeks the cast was removed and another applied until it was thought the congealed blood had absorbed. At another time the treatment consisted of making a small incision on each side of the knee joint, inserting the finger into the knee joint to break up blood clots, evacuating them and putting in "waiting" sutures, irrigating the joint, and after several days closing the "waiting" sutures. Treatment through various stages has been absolute rest, ice-bags, strapping and blistering, and the treatment itself was probably the cause of as much disability as the hemarthrosis.

In an article published November 21, 1896, by J. O'Conor,[1] Trinity College, Dublin, he states, "I think there can be no practical reason why the aspirating needle should not be used in the majority of cases as a mere diagnostic agent in order to find exactly the condition we are called upon to cure. Without seeing the fluid we cannot properly treat the case, nor can we give a correct prognosis. Possibly, in the near future, the development of the roentgen rays may even render such a test unnecessary." This is the first notation that has been found in a search of the literature wherein the use of a needle to aspirate a joint has been suggested. O'Conor states that he feels certain that effusion of blood following injury to the knee joint is much more common than is ordinarily supposed. That condition still exists. The danger of blood gravitating back to the joint from the very puncture itself is mentioned by O'Conor but has not occurred in this series, or if it has occurred it has not been to such an extent as to change the end results.

There is an article on treatment of hemarthrosis of the knee by M. le Dr. Routte,[2] of France, published in 1909. He states that about ten years previously he began systematically to employ puncture in all traumatic effusions of the knee and that his cases exceeded sixty. He states that a large hemarthrosis is due to bony lesions. This, however, is not necessarily true. He used a trocar of medium caliber, as he felt it was useless to employ a large one because the introduction thereof was painful. He states there was no danger of air penetrating into the cavity, and that a second puncture was sometimes necessary but never a third. If local anesthesia is properly done the size of the trocar does not matter.

There is an article written by Charles C. Carr,[3] Lexington, Ky., which was read at the Southern Medical Association in the Section on Railroad Surgery in 1930, and published in the *Southern Medical Journal*, in one paragraph of which he states that "Treatment is aspiration if the knee joint can be emptied. This is followed by tight adhesive strapping. Aspiration is repeated as often as necessary."

The anatomy of the knee will not be gone into further than to state that in dealing with the knee joint we have to consider the lower ends of the femur, the upper ends of the tibia, the patella, the semilunar cartilages, lateral ligaments, crucial ligaments, posterior ligaments, anterior covering of the knee, synovial membrane, vessels and nerves. The strength of the knee joint is almost unlimited as joints are considered.

Wilson and Cochrane,[4] second edition, state that there are certain conditions, if effusion does not clear up readily, or if it is under considerable tension, in which aspiration is indicated. There are a number of books of recent date which have been reviewed and this condition is scarcely referred to, except in conjunction with other injuries.

Up to twenty months ago the treatment at the Lewis-Gale Hospital has been aspiration of the knee joint, withdrawal of all fluid possible, using a No. 16 Luer needle, local anesthesia, 2 per cent novocain, and then the application of an ace bandage. This withdrawal of fluid sometimes had to be repeated six or eight times, the period of disability extending from two or three weeks to three or four months. Usually there was no permanent disability.

The treatment employed in this institution in thirty-two cases treated during the past twenty months is simply withdrawing fluid under local anesthesia with a No. 16 Luer needle; injecting as much, if not more, air into the knee joint than fluid withdrawn; then applying an ace bandage. In this series of cases the temporary disability has been reduced to an average of twelve days in the cases in which the diagnosis is simple hemarthrosis. Permanent disability has not occurred in these cases.

The point of aspiration is varied. Pressure is made above the patella on the lower part of the femur or thigh anteriorly, and the point of aspiration is about one-half inch to the right or left of the lower end of the patella, depending upon the point of greatest bulging. Using

local anesthesia, the needle is carried straight through the joint capsule. If novocain solution is injected in a straight line, as a rule it will be painful, but if the anesthetic solution, 2 per cent novocain, is carried about one-half inch to each side of the line where the needle is to be inserted, there will be no pain. Great care is taken to express all fluid possible. This is done slowly and painstakingly. A 30 c.c. syringe is used to inject air; our policy in the beginning was to inject an amount of air equal to the amount of fluid withdrawn. The policy adopted later is to inject air until the knee joint feels tight. An ace bandage is used then to make as much pressure over the knee joint, for three or four inches below and three or four inches above, as can be tolerated without interference with circulation of blood.

Experience teaches that hemarthrosis will often correct itself without any operation or treatment, but the period of disability is much longer and there is sometimes a permanent disability. Several articles have stated that removal of pressure in knee joints relieves pain.

Case No. 1.

When fluid, whether it is blood or a serotype of fluid, has been withdrawn from the knee and air has been injected, the patient has immediate relief from pain. Even though the pressure of only 30 c.c. of fluid may have been withdrawn and 50 c.c. of air injected, and the knee is tighter, the knee is immediately relieved of pain, which is conclusive of the fact that it is the irritation of the fluid in the joint which causes the pain and not the tightness thereof. The patient is allowed to leave the hospital. He is not given crutches, but is advised to take much rest and to report the next day for observation.

Several of these cases are worth individual consideration.

C. A. (No. 1).—This is an uncomplicated case in which 30 c.c. of bloody fluid were removed and 30 c.c. of air injected. Patient returned to work in two weeks. X-ray picture No. 1 does not show up very well because a very small amount of air was injected.

H. B. (No. 2).—100 c.c. of bloody fluid were withdrawn the day after injury; 100 c.c. of air injected. On account of a complicating comminuted fracture of right patella patient was disabled forty-five days This case was not used in the classification of simple hemarthrosis cases because, if he had had hemarthrosis and nothing else, it is not known what the exact period of disability would have been. X-ray film No. 2 (a) shows knee before aspiration of fluid; (b) shows knee after injection of air; (c) shows knee fifteen days later.

C. B. (No. 3).—This patient is mentioned because of his quick recovery; he returned to work seven days after injury. 30 c.c. of blood were removed and 30 c.c. of air injected. X-ray picture No. 3 does not show a large injection of air.

E. C. (No. 4).—This patient had 50 c.c. of thick, mucilaginous, straw-colored fluid removed and 60 c.c. of air injected November 23, 1931. On December 22, 1931, knee was

Case No. 2.

again aspirated and 4 c.c. of fluid were removed and 20 c.c. of air injected. This patient had acute arthritis of the right knee which

Case No. 3.

was secondary to erysipelas of face due to infection of contuso-lacerated wound of face. The result was very gratifying and we believe it can be attributed to the injection of

Case No. 4.

air. X-ray picture No. 4 was taken before injection of air.

E. F. (No. 6).—X-ray film No. 6 of this

Case No. 6.

patient is shown because this was a septic knee which was probably due to gonorrheal arthritis and improved remarkably. The patient had a history of disability extending over a year previous to this treatment. Only 30 c.c. of air were injected because patient found out we were "blowing her knee back up" and made us discontinue. X-ray film No. 6 was taken after injection of air. This film has a milky, dirty appearance so often noted on films of certain septic joints.

Following is a series of illustrative cases.

C. F. (No. 7).—30 c.c. of blood were removed and 50 c.c. of air injected As far as we could determine the patient was entirely well inside of eleven days. He did not, however, return to work then because of tenderness over anterior attachments of both external and internal semilunar cartilages of left knee. X-ray film No. 7 was taken after injection of air.

Case No. 7.

J. H. (No. 9).—A high school boy, age 17, was playing football and injured his knee November 3, 1930. He was treated by rest and hot applications. Patient first came to this clinic on November 14, 1930, with history of no decrease in size of knee since day of injury. Swelling started immediately after injury and increased until next day. Aspiration was done immediately; 150 c.c. of blood were removed and 130 c.c. of air injected. The rule of injecting as much, if not more, air was here violated because 130 c.c. of air made knee tight. Patient reported at the clinic every few days. He was dismissed in two weeks with no disability.

F. J. (No. 15).—This is a colored patient who did not report for examination until ten days after injury. 20 c.c. of old blood were removed and 40 c.c. of air injected. This patient was off from work twenty-five days. It was

believed that the knee condition did not justify his being off more than two weeks but his insurance while off was practically the same as his income while working. X-ray film No. 15 (a) shows knee before aspiration; (b) shows knee after injection of air.

Case No. 15.

W. L. (No. 18).—This patient did not report for examination until two months and six days after injury. Knee was caught between engine cab and tank. 60 c.c. of thick, mucilaginous, amber-colored fluid were removed and 50 c.c. of air injected. This patient was recovering from pneumonia when he was given knee treatment. It was several months before he could return to work but the knee condition cleared up promptly. X-ray film No. 18 (a) shows knee before aspiration; (b) shows knee after injection of air.

Case No. 18.

L. F. L. (No. 19).—This patient came to the clinic complaining of pain on walking and of his knee being swollen seventeen days after he had struck his left knee against a car door. 30 c.c. of straw-colored, thick, mucilaginous fluid were removed; 40 c.c. of air injected. Immediately after injection of air patient stated he had no pain but was tender over anterior attachments of external and internal semilunar cartilages of left knee. It is impossible to state whether this patient had a hemarthrosis to begin with or an accumulation of fluid from injury to semilunar cartilages. It is interesting to know, however, that all pain was immediately relieved except pain on pressure over anterior cartilaginous attachments. This patient should have semilunar cartilage removed later but was advised against doing so at present. X-ray film No. 19 was taken after injection of air.

Case No. 19.

R. M. (No. 21).—This patient had a hypertrophic arthritis of right knee. He fell, catching right knee under him. The day he was injured 50 c.c. of thick, straw-colored, mucilaginous fluid were removed and 60 c.c. of air injected. This case is mentioned because it is questionable whether the fluid could have come from this injury. This was probably an accumulation of fluid from old hypertrophic arthritis. He was dismissed in thirty-six days with complete recovery from a painful knee which had troubled him for several years. X-ray film No. 21 was taken after injection of air.

W. G. P. (No. 24).—This patient had an

automobile accident which caused a fracture of the outer condyle of the right femur. 50 c.c. of blood were withdrawn the day after

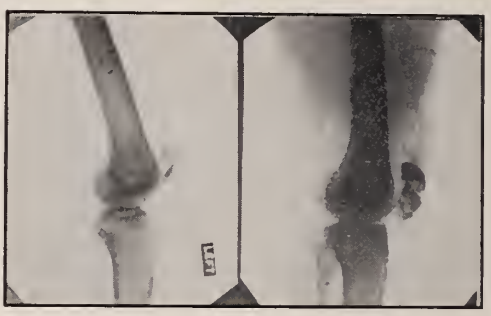
Case No. 21.

accident and 60 c.c. of air injected. Patient had immediate relief from pain and there was no more accumulation of fluid after this treatment. On account of the fracture patient did not return to work for eight weeks from date of injury. X-ray film No. 24 was taken after injection of air.

M. S. (No. 25).—This patient fell down an embankment and fractured her left patella. Ten days after injury no absorption of fluid was noted. 60 c.c. of blood were withdrawn and 100 c.c. of air injected. After this no more trouble was had with accumulation of

Case No. 24.

fluid in knee joint. Patient refused fascia



Case No. 25.

lata operation. She did secure good fibrous

HEMARTHROSIS WITHOUT COMPLICATIONS

No.	Name	Age	M. or F.	W. or C.	R. or L. Knee	Date of Inj.	Date of Apiration	C. C. Fluid Asp.	C. C. Air Inj.	Type of Fluid Asp.	Period of Disability	How Injured.
1.	C. A.	23	M.	W.	R.	8-20-31	8-27-31	30	30	Blood	14 days	Stepped on lump of coal and twisted knee.
3.	C. B.	25	M.	C.	L.	5-4-31	5-4-31	30	30	Blood	7 days	Stepped off truck and sprained knee.
7.	C. F.	41	M.	W.	R.	2-13-31	2-15-31	30	50	Blood	11 days	Boarding train and twisted knee.
9.	J. H.	17	M.	W.	L.	11-3-30	11-14-30	150	130	Blood	No dis.	Ball player tackled him and injured knee.
10.	O. F. H.	44	M.	W.	R.	9-23-31	9-24-31	90	70	Blood	12 days	Automobile accident.
11.	J. T. H.	32	M.	W.	R.	8-22-30	8-29-30	45	75	Blood	13 days	Knelt down on gravel and upon trying to rise could not straighten knee.
14.	J. H. H.	36	M.	W.	L.	1-5-32	1-5-32	40	50	Blood	15 days	Fell into pit.
15.	F. J.	35	M.	C.	R.	8-10-31	8-20-31	20	40	Blood	25 days	Wheelbarrow struck knee.
28.	W. W.	32	M.	W.	L.	7-4-31	7-15-31	30	60	Blood	16 days	Playing golf.
29.	H. W.	17	M.	W.	L.	9-7-30	10-13-30	75	100	Blood	6 days	Struck by auto. Injured 9-7-30 but had no trouble with knee until 10-12-30 when he thought he felt something slip in knee.

HEMARTHROSIS OF KNEE

No.	Name	Age	M. or F.	W. or C.	R. or L. Knee	Date of Inj.	Date of Aspiration	C.C. Fluid Asp.	C.C. Air Inj.	Type of Fluid Asp.	Period of Disability from date of Aspiration	% of Perm. Dis.	Complications	How Injured
1.	C. A.	23	M.	W.	R.	8-20-31	8-27-31	30	30	Blood	2 weeks	None	None	Stepped on lump of coal and twisted knee.
2.	H. B.	25	M.	W.	R.	12-19-30	12-20-30	100	100	Blood	45 days	None	Compound fracture right patella	Getting off truck, fell and struck knee against ground.
3.	C. B.	48	M.	C.	L.	5-4-31	5-4-31	30	30	Blood	7 days	None	None	Stepped off truck and sprained knee.
4.	E. C.	51	M.	W.	R.	9-17-31	11-23-31	50	60	Serum	55 days	None	Acute arthritis, knee	Struck by lump of coal in mine.
							12-22-31	4	20				Erysipelas, face	
5.	F. C.	28	M.	W.	R.	12-25-31	12-26-31	120	150	Blood	Last seen 1-29-32	None	Comminuted fracture, right tibia	Was wrestling and partner tripped him.
							1-8-32	60	30					
6.	E. F.	40	F.	W.	R.	7-1-31	8-15-31	120	30	Pus	Last seen 9-17-31	50%	Septic right knee. Infectious arthritis	No history of injury. Knee began to swell about 6 weeks prior to admission to hospital.
7.	C. E. F.	41	M.	W.	R.	2-13-32	2-15-32	30	50	Blood	11 days	None	None	Boarding train and twisted right knee.
8.	W. F.	50	M.	W.	L.	12-22-31	2-15-32	30	60	Serum	2 weeks	None	Traumatized internal semilunar cartilage	Was kneeling down at work and felt pain in knee when he straightened up.
9.	J. H.	17	M.	W.	L.	11-3-30	11-14-30	150	130	Blood	No dis.	None	None	Ball player tackled him and injured left knee.
10.	O. F. H.	44	M.	W.	R.	9-23-31	9-24-31	90	70	Blood	12 days	None	None	Automobile accident.
11.	J. T. H.	32	M.	W.	R.	8-22-30	8-29-30	45	75	Blood	Last seen 9-12-30	.....	None	Knelt down on some gravel and upon trying to rise, could not straighten knee.
12.	M. H.	19	F.	W.	L.	11-1-31	12-23-31	120	90	Pus	Last seen 1-19-32	25%	Septic arthritis, knee	Automobile accident.
13.	J. F. H.	29	M.	W.	R.	6-30-30	7-9-30	40	60	Blood	18 wks.4 das.	None	Removal of internal semilunar cartilage	Pumphead fell on knee.
14.	J. H. H.	36	M.	W.	L.	1-5-32	1-5-32	40	50	Blood	15 days	None	None	Fell into pit.
15.	F. J.	35	M.	C.	R.	8-10-31	8-20-31	20	40	Blood	25 days	None	None	Wheelbarrow struck knee.
16.	R. F. K.	49	M.	W.	L.	1-4-32	1-4-32	75	90		Still dis.		Fracture of tibia and fibula	Struck by automobile.
17.	T. P. L.	54	M.	W.	L.	1913(?)	10-21-31	40	50	Serum	11 days	None	Fractured external semilunar cartilage removed	Patient subject to "slipping of something in left knee for 18 years. 10-31-31: Knee locked and patient could not get it back."
18.	W. H. L.	46	M.	W.	L.	8-30-30	1-20-31	60	50		1 year	None	Lymphatic and venous disturbance Pneumonia	Caught knee between engine cab and tank.
19.	L. F. L.	37	M.	W.	L.	1-21-32	2-9-32	30	40	Serum	Still dis.	None	Traumatic semilunar cartilage. No operation yet	Struck left knee against car door.
20.	W. M.	43	M.	C.	R.	12-5-31	12-7-31	75	90	Blood	12 wks. 2 das.	None	Incomplete fracture head and neck, right fibula	Struck by automobile.
							12-21-31	50	70					
21.	R. M.	60	M.	C.	R.	10-16-31	10-16-31	50	60	Serum	36 days	None	Hypertrophic arthritis, knee	Fell, catching right knee under him.
22.	C. D. M.	23	M.	W.	L.	11-30-31	12-3-31	50	60	Blood	Still dis.		Comminuted fracture, tibia and fibula	Motor car ran over patient.
23.	E. M.	46	M.	W.	L.	11-21-31	11-22-31	45	50	Serum	5 wks. 1 day		Excoriation of knee	Fell from coal loading motor, striking left knee against floor or post.
							12-12-31	30	40				Hypertrophic arthritis	

HEMARTHROSIS OF KNEE

No.	Name	Age	M. or F.	W. or C.	R. or L. Knee	Date of Inj.	Date of Aspiration	C.C. Fluid Asp.	C.C. Air Inj.	Type of Fluid Asp.	Period of Disability from date of Aspiration	% of Perm. Dis.	Complications	How Injured
24.	W. G. P.	39	M.	W.	R.	9–8–31	9–9–31	50	60	Blood	2 months	None	Fracture of outer condyle, right femur	Automobile accident.
25.	M. S.	39	F.	W.	L.	1–10–31	1–20–31	60	100	Blood	7 months	10%	Fracture and re-fracture, left patella	Fell down embankment.
26.	E. D. T.	54	M.	W.	L.	11–3–30	11–4–30	50	60	Serum	Last seen 12–11–30	None	Strain of ligaments, knee	Fell about 15 ft. landing on knee.
27.	W. V.	62	M.	W.	R.		6–26–31	105	40		6 days		Diabetes mellitus. Acute arthritis, knee	No history of injury.
28.	W. W.	32	M.	W.	L.	7–4–31	7–15–31	30	60	Blood	17 days	None	None	Playing golf.
29.	H. W.	17	M.	W.	L.	9–7–30	10–13–30	75	100	Blood	6 days	None	None	Struck by auto 9–7–30. No trouble with knee until 10–12–30 when he thought he felt something slip in knee.
30.	R. B. D.	48	M.	W.	L.	3–1–32	3–3–32	50	70	Blood	Still disabled		Transverse fracture thru patella.	Automobile accident.
31.	L. S.	40	F.	W.	L.	3–1–32	3–2–32	30	50	Blood	Still disabled		Fracture, patella	Fell, injuring knee.
32.	A. B. B.	26	M.	W.	L.	3–5–32	3–5–32	90	60	Blood	Still disabled		Fracture, upper end of tibia and tuberosity	Motorcycle accident.

union with a good result. Fragments of knee cap were held together with adhesive. X-ray film No. 25 shows knee before and after aspiration.

It is worth noting that there were never any complications in this series of cases that could be attributed to injection of air or needle pentrating the knee joint cavity. The treatment is very simple and does not require hospitalization for a simple hemarthrosis. Treatment is entirely worth while where there is an accumulation of fluid from a chronic arthritis. The patients are relieved immediately from pain and even though knee is tighter following the injection of air they are able to carry knee through nearly normal motions without pain. The technic in performing this operation has not been gone into thoroughly as it probably will not be attempted by any one except by those who are familiar with proper surgical technic. This article is not written in the thought that it may be conclusive, but in the hope that it may point the way so others may try this line of treatment and that there may be eventually an accumulation of enough cases so that conclusions may be definitely formed.

On account of the simplicity of treatment, the lessened period of disability, and no complications having followed air injection, this treatment is being used for this type of cases at the Lewis-Gale Hospital.

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CLINICAL EXPERIENCE WITH FOLLICULAR AND ANTERIOR PITUITARY SEX HORMONES: A STUDY OF THE RESULTS OF TREATMENTS IN 120 PATIENTS.

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In a preliminary communication[1] our clinical experience with the follicular and the anterior pituitary luteinizing hormones in the treatment of forty patients with various disorders of menstruation was reported. This article is a study of 120 patients to whom these

hormones were administered. These studies were begun at the University of Virginia Hospital and have been continued at the Duke University Hospital.

These patients were selected carefully and they were given complete clinical, laboratory and metabolic examinations, as we have previously outlined.[2] They presented definite menstrual abnormalities and subjective symptoms which were thought to be related. The progress of the patients was followed by menstruation charts and symptom lists. A sincere attempt has been made to evaluate properly our results.

We are grateful to the Department of Experimental Medicine of Parke, Davis and Company for generous supplies of follicular hormone (Theelin) and of the anterior pituitary luteinizing hormone (Antuitrin-S). Recently we have been afforded also allotments of an ovarian hormone (Theelol) which is said to be active orally; our clinical experience with it has been too incomplete to report.

The follicular hormone has been furnished to us as a clear solution in 1 c.c. ampoules and has been standardized upon spayed mature rats; its potency has been 50 r.u./c.c. The solution is said to be prepared from Theelin crystals, the solvent being 0.1 per cent sodium hydroxide.

The anterior pituitary luteinizing hormone has been supplied to us as an amber liquid in 10 c.c. vials. It is assayed upon sexually immature rats. The potency is said to be approximately 50 r.u./c.c. Recently it has been supplied with a potency of 100 r.u/c.c. It is a solution of an impure amber powder, which contains the active hormone. The percentage of solids in this solution is quite high. Although the solution of anterior pituitary luteinizing hormone is standardized by its production of excessive luteinization (APR III) in the ovaries of immature rats, there is observed frequently also evidence of follicular stimulation.[3] This is interpreted to mean that it is either a mixture of Prolan A and Prolan B or that the reactions attributed to these latter hormones are in reality those of a single anterior pituitary sex hormone.

The route of administration of these hormones has been intramuscular, except in a few instances in which vaginal suppositories, each containing 50 r.u. of the follicular hormone, were used. Injections have been given daily in dosage of 100 r.u. for intervals of two weeks with rest intervals of two weeks. This regime was repeated as often as it seemed necessary. The character of the menstrual disorder and its associated symptoms determined variations in the hormones used and in the time of administration in relation to the phases of the menstrual cycle. The specific system of dosage will be described as each type of menstrual disorder is discussed. It has been impossible in a number of instances to give daily treatments by injection; local physicians of remote patients have cooperated kindly in continuing treatments that we have outlined; however, the economic status and the remoteness of the patient from willing medical hands have materially curtailed this series. Our hopes are that Theelol will prove sufficiently active and effective to make it available for this type of patient. We have had no experience with the nasal administration of the follicular and luteinizing hormone as described by Pratt and Smeltzer.[4] It might be of distinct advantage in these patients.

Tabulation of Patients Treated

The patients, the results of whose treatments are reported, are classified according to the presenting menstrual abnormality: menopause, amenorrhea, oligo- and hypomenorrhea, hypermenorrhea, and miscellaneous. The results are evaluated from the standpoint of the relief of subjective symptoms, the correction of the menstrual disorder and the permanancy of improvement and are denoted as follows: complete ++++, good +++, moderate ++, slight +, none —.

I. Menopause:

There have been included in this group only those patients whose menstruation had ceased. Those with scanty menstruation and symptoms adjudged to be due to the approaching menopause have been grouped under oligo- and hypomenorrhea.

The follicular hormone has been used exclusively in this group. Treatments were not complemented with any sedatives. The system of treatment has been to give, as the rule, daily injections of 100 r.u. of the follicular hormone for two weeks. If there was no improvement, the treatment was discontinued as a failure. If there was relief of symptoms, treatment was suspended to be resumed upon the beginning return of symptoms. The second series was usually for only one week in

the same dosage. Subsequent treatments were given if necessary.

A. Natural Menopause:

Case Number	Age of Patient	Interval since Menopause	Total* Dosage in r.u.	Relief of Symptoms	Return of Menstruation	Return of Symptoms after Two Weeks' Therapy	Period of Observation
1	53	2 Yrs.	1400	++++	—	—	3 Mo.
2**	47	17 Yrs.	2800	—	—		6 Mo.
3	46	7 Mo.	4200	++++	—	+	3 Mo.
4	47	6 Mo.	2800	++++	—	+	3 Mo.
5	43	2 Yrs.	1200S ***	—	—		6 Mo.
6	46	6 Mo.	1400	++++	—	—	2 Mo.
7	42	3 Mo.	1400	+++	—		1 Mo.
8	45	5 Mo.	2500	++++	—	+	2 Mo.
9	47	5 Mo.	600	++++	—		6Wks.
10	50	1 Yr.	1400	++++	—		1 Mo.
11	40	2 Yrs.	2100	++++	—	+	2 Mo.

*Follicular hormone was used in all cases.
**This patient was subsequently diagnosed involutional psychosis and referred to a psychiatrist for treatment.
***S—Vaginal suppositories.

B. Artificial Menopause:

Case No.	Age of Patient	Operation Causing Menopause	Duration of Menopause	*Total Dosage in r. u.	Relief of Symptoms	Return of Menstruation	Return of Symptoms after Two Weeks' Therapy	Period of Observation
12	24	H, S-O	9 mo.	2800	++++	—	+	4 mo.
13	30	Radium	2½yrs.	1400	++	—		1½mo.
14	29	S-O	11 yrs.	1400	++++	—	—	2 mo.
15	44	Radium	3 yrs.	1400	++++	—	—	2 mo.
16	45	H, S-O	6 mo.	1400S	++++	—	—	3 mo.
17	20	S-O	2 mo.	4200	++++	—	+	4 mo.
18	29	H, S-O	2 yrs.	1400S	++++	—	—	3 mo.
19	38	H, S-O	1 mo.	700S	++++	—	+	4 mo.
20	26	S-O	6 mo.	2800	++++	—	+	2 mo.
21	28	S-O	9 yrs.	1400	++++	—		1 mo.
22**	22	S-O	16 days	2800	++++	+		1½mo.
23	38	H, S-O	10 yrs.	1400	++++	—		2 mo.

Symbols: S—vaginal suppositories.
H—supravaginal hysterectomy.
S-O—bilateral salpingo—oophorectomy.
*—follicular hormone used in all cases.
**Menstruation 10/13—10/18; bilateral S-O 10/24/31; Theelin 200 r. u. daily 11/10—11/20; uterine bleeding 11/23—11/27; no further hormone therapy; uterine bleeding 12/5—12/10.

Discussion: It would seem logical to expect extremely satisfactory results from the follicular hormone in these cases. Of the twenty-three patients treated, nineteen received excellent relief of subjective symptoms. Of the remaining four, one received good relief, one moderate and two no relief. One of the patients who received no relief was subsequently proven to have a neurologic etiology of her symptoms.

It is interesting to note that in only one instance did bleeding follow treatment. Here it is quite reasonable to assume that the ovarian tissue was not completely removed at operation. We have been unable, therefore, to duplicate the work of Zondek and Aschheim, who reported the establishment of two menstrual cycles in a patient castrated two years previously. We can assume that either our dosage is too small or that the hormone which we have used is incapable of inducing uterine bleeding in this type of patient.

Another striking observation is that in only six of the fourteen patients in whom observations as to the permanency of treatment for two weeks could be made, there was no return of symptoms. Eight patients required subsequent treatments to obtain relief of recurring symptoms.

We are well aware of the pitfalls of clinical observations in symptomatic relief. We have employed no controls. We have tried to evaluate our results as accurately as possible. We are in full accord with Pratt's[5] statement that "subjective symptoms should be excluded as criteria for judging effects of ovarian hormone therapy."

II. Amenorrhea:

Both primary and secondary amenorrheas were treated. Where possible the endocrinopathy is given.

Treatments included the use of the follicular hormone, the anterior pituitary luteinizing hormone and thyroid extract. The scheme of administration of the follicular or the anterior pituitary luteinizing hormones has been that of daily injections of 100 r.u. for two weeks, followed by a rest interval of two weeks. If menstruation did not ensue, this regime was repeated until menstruation occurred or until it was deemed useless to continue. The choice of hormones has been difficult in certain instances as well as uncertain. It can only be said that in patients who showed genital hypoplasia the follicular hormone was usually employed; in those showing evidences of hypo-

function of the anterior pituitary, the luteinizing hormone was used. Often both were administered. Where there was a definite lowering of the basal metabolic rate, thyroid extract was also used; its use is noted in each instance. No attempt is made in these instances to attribute results obtained to the follicular or luteinizing hormones. No other forms of therapy have been employed except the institution of rational diet in obese patients.

A. Primary Amenorrhea:

Case No.	Age of Patient	Endocrinopathy	Treatment R. U.	Menstruation Initiated	Subsequent Menstruation Regular	Period of Observation
24	16	Eunuchoid	FH 7000 APLH 1400	+ (Fol. 5 series)	—	9 mo.
25	15	Eunuchoid	FH S 1400	+	+	6 mo.
26	23	Adiposo-genital	APLH 2800	+ (Fol. 1 series)	+	9 mo.
27	18	Infantile	APLH 1400	+	+	3 mo.
28	18	Acromegaloid	FH 2800			
		Eunuchoid	APLH 2800	—		3 mo.
29	20	Masculine	FH 2800 Thy.	+ (Fol. 1 series)	+	4 mo.
30	18*	Eunuchoid	FH S 2100	—	—	3 mo.
31	17	Eunuchoid	FH 2800	—	—	2 mo.
32	19	Pluriglandular	FH 1400 APLH 1400	—	—	3 mo.

*Patient had epilepsy; treatments discontinued when attacks were aggravated.
Symbols: FH—follicular hormone.
APLH—anterior pituitary luteinizing hormone.
S—vaginal suppositories.
Thy.—thyroid extract.

Discussion: Of the twenty-six patients with either primary or secondary amenorrhea, eighteen menstruated following treatment and in eight menstruation did not occur. Of the eight in whom menstruation did not follow treatment, two had incomplete treatment, another became pregnant and two others required discontinuation of treatments due to aggravation of attacks of epilepsy in one instance and of major hysteria in the other.

Of the fifteen patients whose follow-up records have been adequate enough to allow conclusions being drawn as to the permanency

B. Secondary Amenorrhea:

Case No.	Age of Patient	Endocrinopathy	Interval Since Last Menstruation	Treatment R. U.	Menstruation Returned	Subsequent Menstruation Regular	Period of Observation
33	21	Pluriglandular	4 mo.	APLH 5600 Thy.	+ (Fol. 1 series)	+	8 mo.
34	24	?	12 mo.	APLH 2800	+ (Fol. 1 series)	—	5 mo.
35	21	Eunuchoid	5 mo.	FH 1400	+		1½mo.
36	23	Adiposo-genital; obesity	7 mo.	APLH 4200 Thy.	+ (Fol. 1 series)	No	6 mo.
37	29	Adiposo-genital; obesity	2 mo.	APLH 5600 FH2800 Thy.	+ (Fol. 1 series)	No	6 mo.
38	16	Eunuchoid	2 wks. Previously 3 mo.	FH 7000	+ (Fol. 1 series)	+	9 mo.
39*	17	?	6 mo.	FH 1400 APLH 700	—	—	4 mo.
40	27	Pluriglandular	1 mo. Previously 3 mo.	APLH 1400 FH 1400	+ (Fol. 1 series)	—	4 mo.
41	20	?	1½mo.	FH 2800	+ (Fol. 1 series)	+	3 mo.
42	20	Pluriglandular	5 mo.	FH 4200 Thy.	+ (Fol. 1 series)	No	3 mo.
43	19	?	4 mo.	APLH 1400	+		1 mo.
44	20	Pluriglandular	6 mo.	FH 2800 APLH 1400	+	No	4 mo.
45	21	Eunuchoid	4 mo.	APLH 1400	+		1 mo.
46	18	Acromegaloid	5 mo.	APLH 2800	+	+	3 mo.
47	17	Adiposo-genital; obesity	3 yrs.	APLH 1400	—		2 mo.
48	31	Adiposo-genital; obesity	2 mo.	APLH 1400	—		2 mo.
49**	23	Adiposo-genital; obesity	1½mo.	APLH 2800	—	No	4 mo.

*Patient's attacks of hysteria were aggravated and treatment was discontinued.
**Patient had an intercurrent pregnancy.
Symbols: FH—follicular hormone.
APLH—anterior pituitary luteinizing hormone.
Thy.—thyroid extract.

of improvement, eight experienced regular menstruation subsequent to treatment, three continued to menstruate but irregularly and four experienced no subsequent menstruation. Since two of the eight patients whose subsequent menstrual cycles were regular received thyroid extract, in only six of these patients the results can be attributed to the follicular or luteinizing hormones.

Our experience with five patients who presented a clinical picture of obesity of the adiposo-genital type has been particularly unsatisfactory. Three of these patients failed to menstruate following treatment with the luteinizing hormone. The two patients, in whom menstruation occurred following treatment, had no subsequent menstruation, and in these two thyroid extract had been combined with the luteinizing hormone in treatment.

It is quite difficult to evaluate the two hormones from the above tables. In the eighteen patients in whom menstruation followed treatment, six were treated with the follicular hormone, nine were treated with the luteinizing hormone and three were treated with a combination of the two. Since thyroid extract was used in addition in five of these patients, we can consider only 13 of these patients as showing results attributable to either the follicular or luteinizing hormones. Of the eight patients, in whom menstruation did not result following treatment, the follicular hormone was used in two, the luteinizing hormone in three and a combination of the two in three. Of the eight patients, in whom subsequent menstruation was regular, three received the follicular hormone, three received the luteinizing hormone, one received the follicular hormone and thyroid extract and one received the luteinizing hormone and thyroid extract. Of the seven patients in whom subsequent menstruation was irregular or did not occur, two received the follicular hormone, one received the luteinizing hormone and three received a combination of the two.

It would seem logical to infer from the positive results obtained with the luteinizing hormone that it is capable of stimulating the ovaries to function adequately for menstruation. It is impossible to explain why once menstruation has resulted from treatment it cannot be maintained regularly even with a continuation of the same treatment. The occurrence of pregnancy in a patient receiving the luteinizing hormone would seem to indicate that there is no inhibition of ovulation by this dosage.

III. Oligo- and Hypomenorrhea:

Into this group are placed forty-six patients in whom there were irregularities of the menstrual interval, scantiness of menstrual flow or both. All of these patients presented symptoms associated with the abnormality of menstruation. They came to us for relief of these symptoms. These patients are grouped according to the character of the outstanding symptoms into five groups: premenopausal, vasomotor, dysmenorrhea, headaches, and neurologic.

Both the follicular hormone and the luteinizing hormone have been used singly or in combination. In the premenopausal patients the follicular hormone was used. The daily dosage of these two hormones has been 100 r.u. for two weeks with rest intervals of two weeks. This regime was repeated until discontinuance was advisable either due to relief or to failure. The follicular hormone has been administered during the intermenstrual phase. The luteinizing hormone has been administered during the late premenstrual and menstrual phase, the administration beginning about one week before menstruation and continuing throughout the duration of the flow.

Discussion: Of the forty-six patients with scantiness of flow or irregularities of the menstrual interval, twenty-seven showed excellent regulation of the menstrual irregularity fol-

A. Premenopausal:

Case No.	Age of Patient	Duration of Symptoms	Total Dosage* R. U.	Relief of Symptoms	Regulation of Menstruation	Period of Observation
50**	47	6 mo.	4200	+++	++++	6 mo.
51	46	1 yr.	8000	++++	+++	8 mo.
52	39	1 yr.	1400	++	—	1 mo.
53***	41	9 yrs.	2800	—	—	3 mo.
54	35	6 mo.	1200	++++	—	1 mo.
55	37	1 yr.	1400	++	—	1 mo.
56	39	4 mo.	1200S****	++++	++++	2 mo.

*Follicular hormone used solely.
**Treatment discontinued when patient began to have attacks of major hysteria.
***Patient's symptoms later proved to have a neurologic basis.
****S—vaginal suppositories.

lowing treatment, five showed good regulation and fourteen showed no change in the menstrual condition.

The relief of symptoms associated with these menstrual irregularities is best considered under group symptoms. Of the seven patients whose symptoms were of the premenopausal type, three experienced complete relief, one good relief, two moderate relief and one no relief. In all of these patients the follicular hormone was used.

B. Vasomotor:

Case No.	Age of Patient	Additional Symptoms	Treatment Dosage R. U.	Relief of Symptoms	Regulation of Menstruation	Period of Observation
57	29		APLH 4200	+++	—	4 mo.
58	30	dysmenorrhea	APLH 1400 FH 1400	—	—	2 mo.
59	26	dysmenorrhea	FH 4200	++++	++++	4 mo.
60	24	dysmenorrhea	FH 1400	++++	++++	2 mo.
61	23	frigidity*	FH 4200	++++	++++	3 mo.
62	26		FH 700S	++++	++++	1 mo.
63	30		APLH 4200	++++	++++	4 mo.
64	28		FH 2800	+++	++++	2 mo.
65	23		FH 1400	+++	++++	3 mo.
66	30		FH 2800	+++	++++	3 mo.

*No relief of this symptom.
Symbols: APLH—anterior pituitary luteinizing hormone.
FH—follicular hormone.
S—vaginal suppositories.

C. Dysmenorrhea:

Case No.	Age of Patient	Treatment Dosage R. U.	Relief of Symptoms	Regulation of Menstruation	Period of Observation
67*	20	FH 4200	—	++++	8 mo.
68	20	FH 1400	++++	++++	2 mo.
69	21	FH 1400	++++	++++	2 mo.
70	15	FH 2800	++++	++++	5 mo.
71**	22	FH 5600	++	++++	5 mo.
72	27	FH 7000	++++	++++	6 mo.
73	20	APLH 1400	+++	++++	2 mo.

*This patient had a 3rd degree retroversion of uterus.
**A menstrual urticaria was completely relieved.
Symbols: FH—follicular hormone.
APLH—anterior pituitary luteinizing hormone.

D. Headache:

Case No.	Age of Patient	Special Symptoms	Treatment Dosage R. U.	Relief of Symptoms	Regulation of Menstruation	Period of Observation
74	29	Menstrual headaches	APLH 4200	++++	+++	4 mo.
75	29	Menstrual headaches; Meningismus	FH 1400 APLH 5600	++++	++++	9 mo.
76	24	Premenstrual headaches	ALPH 1400	++++	++++	2 mo.
77	30	Menstrual headaches; Dysmenorrhea	FH 4200 APLH 1400	Headaches — Dysmenorrhea ++++	++++	6 mo.
78	40	Menstrual headaches	APLH 2800	++++	++++	4 mo.
79	40	Menstrual headaches	APLH 1400	++++	++++	3 mo.
80	24	Headaches	FH 1400	++++	+++	1½mo.

Symbols: FH—follicular hormone.
APLH—anterior pituitary luteinizing hormone.

Of the ten patients whose symptoms were primarily of vaso-motor origin, five received excellent relief, four good relief and one no relief. The follicular hormone was used in seven, the luteinizing hormone in two and in the patient in whom no relief was obtained both hormones were used.

There were seven patients who complained primarily of dysmenorrhea and six other patients in whom dysmenorrhea was one of the major symptoms. Of these thirteen patients, nine received excellent relief, one received good relief, one moderate relief and two no relief. One of the patients in whom a negative result was obtained had a third degree retroversion of the uterus. The follicular hormone was used in twelve of these patients and the luteinizing hormone in one. Both patients who received negative results had been administered the follicular hormone.

There were seven patients who complained primarily of headaches. In all of these patients the headaches were thought to be quite definitely related to the menstrual cycle. Six of these patients received complete relief and one no relief. The follicular hormone was used in one patient, the luteinizing hormone in five

patients and in the one patient who did not experience relief, both the follicular and the luteinizing hormones were used.

There were fifteen patients treated whose primary complaints were of the neuro-psychic type. The majority of these patients were referred to us from psychiatric or neurological services. Since the symptoms of these patients were associated with abnormal menstruation, we were anxious to observe the effect of hormone injections. In five of these patients excellent relief of symptoms was experienced; in two the relief was moderate; in eight there was no relief. In those in whom excellent relief was obtained, the follicular hormone was used in four; the luteinizing hormone was employed in one. In those in whom moderate relief was obtained, the follicular hormone was used. In those in whom no relief was obtained, five received the follicular hormone and three were given the luteinizing hormone.

E. Neurologic:

Case No.	Age of Patient	Special Symptoms	Treatment Dosage R. U.	Relief of Symptoms	Regulation of Menstruation	Period of Observation
81	14	Melancholia; Hysteria	APLH 1400	++++	++++	4 mo.
82	27	Hysteria associated with menstruation	FH 1400	++	—	1 mo.
83	29	Hysteria & disorientation associated with menstruation	FH 2800	++	+++	3 mo.
84	23	Vomiting & diarrhea associated with sexual excitement	FH 1400	++++	++++	1 mo.
85*	28	Obesity; atonia; G-I upsets	APLH 800	—	—	1 mo.
86	36	Asthenia; V-M instability	FH 2800	++++	+++	2 mo.
87	33	Melancholia; dysmenorrhea	FH 1400	++++	++++	2 mo.
88	32	Dyspareunia; dysmenorrhea	FH 2800	++++	++++	4 mo.
89	24	Melancholia; frigidity	FH 1400	—	—	3 mo.
90**	22	Epilepsy; masturbation	APLH 1400	—	—	1 mo.
91***	14	Schizophrenia	APLH 4200	—	++++	4 mo.
92	29	Melancholia	FH 1400	—	—	1 mo.
93***	32	Disorientation; frigidity	FH 1400	—	—	1 mo.
94****	30	Melancholia; Dyspareunia	FH 1400	—	—	1 mo.
95	27	Hyperesthesia; melancholia	FH 1400	—	—	1 mo.

*Treatment discontinued due to severe systemic reactions.
**Treatment discontinued because of exaggeration of epileptic attacks.
***Committed to psychopathic hospital.
****Treatment discontinued due to exaggeration of symptoms.
Symbols: FH—follicular hormone.
APLH—anterior pituitary luteinizing hormone.

It is interesting to note that in three of the patients with oligomenorrhea, frigidity was among the symptoms complained of. This symptom was relieved in none of these patients. The follicular hormone was used in all instances.

The relationship between the improvement of the menstrual irregularities and the relief of symptoms is important. Of the twenty-four patients who received excellent relief of symptoms, nineteen experienced complete regulation of menstruation; four experienced good regulation; and one showed no change in menstruation. Of the six patients who experienced good relief of symptoms, five had complete regulation of menstruation; one experienced no change. Of the five patients who experienced moderate relief of symptoms, one had complete regulation of flow; one received good regulation; and three experienced no change. Of the eleven patients who received no relief of symptoms, two had a complete regulation of flow and in nine no change was observed.

In regard to the return of symptoms following cessation of treatment, definite conclusions cannot be drawn in the majority of instances due to the rather short period of observation in most patients. However, return of symptoms was noted in cases 78, 79 and 80. There are no other instances of return of symptoms where relief was obtained by treatment during the period of observation of each patient.

IV.—Hypermenorrhea:

Under this heading are grouped eighteen patients who either experienced excessive flow at the time of menstruation (menorrhagia) or had uterine hemorrhage not related to the normal menstrual flow (metrorrhagia). All of these patients, except three whose bleeding

was definitely of an inflammatory character, were endocrinopathic.

Both the follicular and the luteinizing hormones were used. In menorrhagia the system of administration was somewhat different than that in metrorrhagia. In the first condition the follicular hormone when used was given 100 r.u. daily for two weeks during the intermenstrual phase in the hope of lessening the subsequent excessive menstrual flow. Where the luteinizing hormone was employed it was given in doses of 100 r.u. daily for two weeks, beginning injections five to seven days before the expected excessive period and these were continued throughout the duration of the period. In metrorrhagia the follicular and the luteinizing hormones were administered in daily doses of 100 r.u. for varying periods of time in attempts to check the uterine bleeding.

A. Endocrinopathic Menorrhagia:

Case No.	Age of Patient	Duration	Additional Symptoms	Treatment Dosage R. U.	Regulation of Menorrhagia	Relief of Additional Symptoms	Period of Observation
96	20	2 mo.		APLH 1400	++++		2 mo.
97	30	5 yrs.	Vasomotor	APLH 1400	++++	++++	2 mo.
98*	21	6 mo.	Dysmenorrhea	APLH 1400	++++	—	4 mo.
99	20	1 yr.	Dysmenorrhea	FH 1400 APLH 1400	++++	++++	3 mo.
100	30	3 yrs.	Dysmenorrhea	APLH 4200	—	—	4 mo.
101	23	6 mo.		FH 1400	—		2 mo.
102	26	2 yrs.	Dysmenorrhea	FH 2800	—	—	4 mo.

*This patient has an acute anteflexion of the uterus.
Symbols: APLH—anterior pituitary luteinizing hormone.
FH—follicular hormone.

Discussion: Our results in the treatment of menorrhagia and metrorrhagia have not been excellent and do not allow any very general conclusions being drawn. Of the seven patients with endocrinopathic menorrhagia who were treated, four received excellent regulation of excessive menstruation and three received no result. The four patients who received regulation were treated with the luteinizing hormone. Of the three patients in whom negative results were obtained two were treated with the follicular hormone and one with the luteinizing hormone.

An interesting observation might be made cerning four of these patients who complained of dysmenorrhea associated with excessive menstruation. Only one of these patients received relief of this symptom. This patient was treated with the luteinizing hormone. Of the three patients who received no relief, one received luteinizing hormone, one was given the follicular hormone and one received both. The latter patient, however, had an acutely anteflexed uterus.

With the patients who showed endocrinopathic metrorrhagia our results were distinctly poor. Of the seven patients treated in this class, only two experienced a control of the

B. Endocrinopathic Metrorrhagia:

Case No.	Age of Patient	Treatment Dosage R. U.	Control of Metrorrhagia	Subsequent Menstruation Normal	Period of Observation
103*	20	FH 1400	—		1 mo.
104*	20	FH 2800	—		2 mo.
105**	19	FH 1400	—	+	6 mo.
106**	22	FH 1400	—	+	6 mo.
107	21	FH 1400	++++	+	3 mo.
108***	23	APLH 800	—		1 mo.
109****	22	APLH 1400	++++	+	4 mo.

*Radium necessary to control bleeding.
**D. & C.; parathormone and calcium lactate controlled bleeding.
***D. & C. necessary.
****Patient complained of mid-menstrual spotting for 4-5 days each month.
Symbols: FH—follicular hormone.
APLH—anterior pituitary luteinizing hormone.

C. Inflammatory Metrorrhagia:

Case No.	Age of Patient	Treatment Dosage R. U.	Control of Metrorrhagia	Subsequent Menstruation Normal	Period of Observation
110	35	APLH 1400	++++	+	2 mo.
111	31	APLH 1400	—		1 mo.
112	22	APLH 1400	—		1 mo.

APLH—anterior pituitary luteinizing hormone.

metrorrhagia. One of these patients received the follicular hormone and one received the luteinizing hormone. Of the five patients who received negative results, four received the follicular hormone and one the luteinizing hormone.

Of the three patients with inflammatory metrorrhagia who were treated primarily as controls, one received a satisfactory control of the menorrhagia, the other two received no benefit. All three were treated with the luteinizing hormone.

V. Miscellaneous:

Into this class are placed eight patients with various symptoms which are not related to definite disorders of menstruation.

Case No.	History	Treatment	Subsequent Record
113 114 115 116	Patients with hyperemesis complicating 3-4 month pregnancies. They had all failed to respond to the usual treatment of this condition	Follicular hormone 200 R. U. daily for 3-4 days.	Cessation of vomiting on third or fourth day in all. One patient returned in three weeks with an incomplete abortion.

Case No.	Age of Patient	History	Treatments	Result
117	60	Patient with senile vaginitis and pruritus.	Follicular hormone 100 R. U. daily for one week. F. H. suppositories, two daily for one week.	No relief
118	47	Patient with senile vaginitis and pruritus.	Follicular hormone 100 R. U. daily for two weeks.	No relief
119	39	Primipara, seven months pregnant who demonstrated marked asthenia, low B. P. and V-M instability.	APLH 100 R. U. q. 2 d. for two months.	Symptomatic relief; rise of 20 m. m. in B. P.; delivery at term.
120	58	Menopause 12 years previous. Complaint of melancholia.	APLH two series of 1400 R. U.	Symptomatic relief.

Discussion: The cases are detailed primarily for completeness; no conclusions are drawn nor any explanations offered.

Our patients of this type have unfortunately been too few. It has been striking as well as disappointing that we have not seen more of these patients with endocrinopathic hypermenorrhea during this study. We believe with Novak[6] that the luteinizing hormone is effective in these patients. We cannot be impressed with any effectiveness of the follicular hormone in these patients.

Comments

Reactions: Individual reactions to these hormones have been very interesting. There have been no severe reactions from the preparation of the follicular hormone we have used. A good number of patients, however, have complained of pain during and immediately following the injection. This has been sufficiently severe in several patients to cause them to discontinue treatment. We are told[3] that this is due to the presence of .1 per cent sodium hydroxide, which is necessary to render the Theelin crystals soluble. There have been no general nor systemic reactions.

Reactions have been more frequent and of a more severe grade with the anterior pituitary luteinizing hormone. They have been, however, primarily of a local character. These are to be attributed, we believe, to the rather high percentage of solids and not to any particular protein fractions. Patients have exhibited quite sore arms in several instances following treatments. There has been associated often a local erythema. The reaction has been sufficiently severe occasionally to cause the patient to discontinue treatment. Several of the patients have shown slight elevations in temperature following injections. There has been only one patient who manifested quite severe general reactions. This patient after each of six injections of 200 r.u. developed severe occipital headache, vomiting and temperature of 100° F. Treatment was discontinued.

Aggravation of Neuro-psychiatric Symptoms: This was observed in five patients and treatments were suspended. In cases 18 and 90, epileptic attacks came with greater frequency and severity following treatment. In cases 39, 50 and 94, hysteria was aggravated to assume a major form characterized by convulsions.

Character of Menstruation Following Administration of Hormones: We have noticed uniform failure of menstruation to return following treatments in patients with natural or artificial menopause. When bleeding has followed treatments in patients with primary and secondary amenorrhea, it has been often irreg-

ular and infrequent. The term "menstruation" is applied in these cases with considerable uncertainty, for we cannot infer that a normal menstruation and this type of uterine bleeding are synonymous. There are four patients reported whose treatment was followed rather promptly by bleeding but who, in spite of continuation of the same treatment, failed to have subsequent menstruations.

It is difficult to believe that this type of bleeding is menstruation; in two of these patients we are inclined to assume with Novak[7] a vicarious role of the anterior pituitary with a failure of normal ovarian stimulation. It would seem reasonable to assume normal menstruation in those patients experiencing regular rhythmic uterine bleeding following treatment and continuing after discontinuation of treatment.

Value of Correlation of Clinical, Surgical and Pathological Studies: An attempt to evaluate carefully the effects of these hormones on the tissues of the human female as well as to determine the character of bleeding following their use is very necessary. An effort should be made to obtain studies of the ovaries of patients who have been receiving the luteinizing hormone; a study of these ovaries in relation to the time of administration of the hormones, the phase of the menstrual cycle during its administration and the microscopic and gross changes in the ovaries should prove of value. Dosage of the hormone may be varied and an attempt to recover ova by the method of Pratt[8] may be combined. Study of curettings taken also at the time of operation may be correlated. We are attempting such studies at present. Results are too incomplete at this time to report. We are planning, also, to study the character of uterine bleeding resulting in patients with amenorrhea subsequent to treatments with these hormones. These studies are to comprise microscopic examination of the menstrual blood as well as of the uterine curettings.

We wish to express our appreciation to Dr. E. A. Sharp for his cooperation in making these hormones available to us in such generous quantities.

Summary

(1). The results of treating 120 patients with the follicular (Theelin) and anterior pituitary luteinizing hormones (Antuitrin-S) are analyzed. The route of administration has been intramuscular except in a few instances where the follicular hormone was given by vaginal suppositories. Thyroid extract was used in addition in five patients; the results in these patients are not attributed to the follicular or luteinizing hormones.

(2). The follicular hormone was used in the treatments of twenty-three patients with natural or artificial menopause. Bleeding recurred in only one instance. This patient evidently had ovarian tissue left at the time of operation. Relief of subjective symptoms was excellent in nineteen patients. We are inclined to believe, however, that the relief of subjective symptoms, regardless of how grateful it is to the patient, should not be used as an evaluation of hormonal action.

(3). A total of twenty-six patients with primary and secondary amenorrhea were treated. Uterine bleeding followed treatment in eighteen patients; of these, however, only eight exprienced continued rhythmic uterine bleeding, interpreted as being normal menstruation. Two of these patients had received thyroid extract. Our records show little difference in the effectiveness of the two hormones. Using the production and maintenance of regular uterine bleeding as a criterion, we are not impressed with the specificity of either hormone, when used in the dosage we have employed.

(4). Of the forty-six patients with oligo- and hypomenorrhea, twenty-seven obtained excellent regulation of menstruation, five good regulation and fourteen experienced no effect. Relief of associated symptoms and regulation of the menstrual irregularity were definitely related in our experience. Of the twenty-seven patients experiencing excellent regulation of the menstrual disorder, eighteen experienced excellent relief of subjective symptoms, five good relief, one moderate relief and three no relief. Of the fourteen patients in whom the menstrual condition was not improved, one experienced excellent relief of subjective symptoms, three good relief, nine no relief. It is difficult to evaluate the two hormones from such a series. Of the twenty-seven patients receiving excellent regulation of menstruation, twenty received the follicular hormone and seven the luteinizing hormone. Of the fourteen patients in whom menstruation was not regulated, nine received the follicular hormone and five the luteinizing hormone.

(5). The effect of these hormones upon special symptoms associated with oligo- and hypomenorrhea is interesting. Three patients who complained of frigidity received no relief. Of thirteen patients who complained of dysmenorrhea, nine received excellent relief, one good relief, one moderate relief, and two no relief. Of seven patients who complained of menstrual headaches, six received excellent relief; in three of these patients the relief was only temporary.

(6). Our experience with eighteen patients with hypermenorrhea does not warrant any worthwhile inferences being made. The follicular hormone has not proved of value. The luteinizing hormone has yielded satisfactory results in some instances.

(7). We report eight patients with miscellaneous symptoms. No conclusions are drawn.

(8). Reactions to the follicular hormone have not been severe. The luteinizing hormone has caused more severe local reactions and in one instance moderate general reaction.

(9). Aggravation of epilepsy in two patients and of hysteria in two others has occurred.

(10). There should be a close correlation between clinical, surgical and histo-pathological studies of the effects of these hormones. Particular attention should be paid to the ovarian responses to these hormones and to studies of the endometrium and menstrual blood following their administration.

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POSTURE IN RELATION TO MEDICINE.

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It is only fitting that we begin by defining posture. The Subcommittee on Orthopedics and Body Mechanics of the recent White House Conference stated that posture or body mechanics is the mechanical correlation of the various systems of the body with special reference to the skeletal, muscular, neurological and visceral systems. It should be emphasized that this correlation should be essentially a dynamic and not simply a static one. A typical picture would be that of the athlete who runs easily without loss of motion, or that of the dancer whose every movement spells rhythm and grace. We believe too that the keystone of this mechanical correlation is the will to correlate properly.

It is believed that the present biped posture of man has been evolved from quadruped posture. Armitage Whitman has said that "One of man's hardest battles is the battle against the force of gravity." This biped or upright posture is maintained only at the expense of active, more or less constant muscular effort. It is evident that the body has not fully adapted itself to the biped posture. However, it is only by having the hands free for other labors of art and science and for the finer adjustments of life that we have made progress. Our proud position at the head of the animal kingdom is due largely, of course, to our upright posture. So we feel that we are compensated in spite of its disadvantages.

So, our general problem is that of bringing into proper action the antigravity muscles so that the body may be erect, the vital organs function correctly and that there may not be an unnecessary expenditure of energy.

Goldthwaite has well said that in the upright position the poise or attitude in which there is the least strain, and therefore which is the correct attitude, is that with the body held so that it is made as tall as possible without raising onto the toes. The head is erect, the shoulders back, the chest high, the abdomen flat, the physiological curves of the spine are not exaggerated, the knees are straight and the body weight evenly distributed on the feet. Roughly speaking, a plumb line laterally should pass through the external ear, the shoulder, hip, knee and ankle joints. In other words, the muscles should hold the skeleton in balance.

We know that all of us are not built alike. Three types of build have been outlined. First, there is the stout, the heavy, herbiverous type; second, there is the light, slender, lank, carnivorous type; third, there is an intermediate or neutral type. Heredity plays a large part in determining the type of build that we have. This cannot be changed by environment, and certain diseases seem to be associated in general with types of build. The heavy type seem to suffer particularly from arteriosclerosis, gout, diabetes, chronic kidney and gall-bladder diseases and hypertrophic arthritis. The slender type seems prone to tuberculosis, infections in general, intestinal disorders and atrophic arthritis.

Now, rather dogmatically to be sure, so called posture standards have been set up. Lloyd Brown, of Boston, in adults, and Armin Klein, of Boston, in children, have evolved what they considered to be fairly satisfactory standards through the examination of a large number of cases. Four grades, A, B, C, D, are designated according to the degree of proper balance which the subject attains. I do not feel that these standards should be rigidly adhered to but they do serve as useful guides to classification of groups.

The question arises why some individuals have Grade A or excellent posture and others have Grade D or poor posture. The question of relationship of fatigue to poor posture has been a moot one. Some argue that fatigue causes poor posture, while others insist that poor posture results in fatigue. This discussion bears the same fruit as that of the premier origin of the hen or the egg. All that can be said definitely is that there is a relationship between the two and that the two must be given conjoint attention.

Next, what part does malnutrition play in relationship to poor posture? Klein and Leah Thomas have made some interesting observations in their two-year survey of 1,708 school children in the Chelsea, Mass., schools. In this survey, 961 of the children were in the trained or posture group, and 747 were untrained in posture. Improvement of poor nutrition was much more marked in the group that received posture training than in the group which did not receive posture training. The corollary was also true. It was amongst the children whose nutrition improved most that the greatest improvement in posture took place. However, posture training of itself insured a definite advance in posture irrespective of the state of nutrition.

A boy of ten years of age who has been given posture training at the Posture Clinic at the Medical College of Virginia Dispensary, improved in posture from Grade D to Grade B in six months. However, owing to home conditions, there was a gain of only one-half pound in weight during this period.

Then there was a boy seven years of age, whose posture was poor and who was undernourished, who was seen at the office. Postural exercises were prescribed and performed regularly. At the end of six months his posture had been improved from Grade D to Grade B and this boy had gained six pounds in weight.

In addition to fatigue and malnutrition, whose causal relationship may be open to question, there are other more definite causes of poor posture. Amongst these may be mentioned conditions, such as eye strain, chronic debilitating diseases, such as tuberculosis, and disturbances of metabolism, such as rickets.

Poor posture is often the result of bad habits. A slouchy standing posture was at one time popular, especially with girls. Sitting constantly on the end of the spine rather than on the buttocks, which is the correct position, is a common factor. Sitting in improperly made chairs is detrimental to good posture. Someone has wisely said that poor posture began when chairs were invented. Sleeping in soft, sagging beds is a bad influence. Other habits leading to poor posture are almost too numerous to mention.

We frequently meet certain conditions as a result of standing posture and more especially poor standing posture. The head may be too far forward and the muscles of the back of the neck strained. The shoulders may be rounded, straining the muscles about the scapula. The chest may be flattened, so that lung aeration is decreased and the work of the heart increased. The abdominal wall may be protuberant and flabby, resulting in a dropping of the abdominal organs and interference with their circulation. The pelvic inclination may be increased and the pelvic viscera further congested. The lumbar curve may be increased. Increased strain is then placed on the muscles and ligaments of the whole lower extremity, owing to the unnatural position assumed.

Furthermore, the relaxed, ungraceful, inefficient position of the body may have an influence on the mental make-up of the individual and lead to carelessness and inefficiency there also.

Talbot and Brown have shown that, in children with poor posture, visceroptosis is almost constantly a corollary. This results in a sluggish peristalsis and constipation. They report cases in which obstinate constipation was cured entirely by postural position and exercises.

A case of cyclic vomiting was referred from the Pediatric Service of the Medical College Dispensary. The child had been given the ordinary medical treatment. There had been some improvement. However, improvement became more marked after six weeks of postural training.

The picture of the child with infectious arthritis, known as Still's disease, and who has bowel disturbances—either constipation or diarrhea—and who has a wretched posture, is too well known to require discussion.

Also, the frequent relationship between Orthostatic Albuminuria and poor posture is well known, and Schloder and Weith found that 20% of the individuals examined by them showed albuminuria as a result of placing the individuals into different postures.

In adults we find often similar conditions exaggerated.

Stoll reports a case of a girl, twenty-five years old, who complained of constant pain about the heart. After other medical remedies had failed, it was found that her standing posture was poor and that she had been working at a table which was too low for her. When she was given a higher table her pain soon disappeared.

Tuberculous individuals are notorious for their poor posture. Manifestly, tuberculosis cannot be attributed to poor posture. However, it is difficult to see how a flat chest and shallow breathing could help one to ward off this disease.

The relationship between visceroptosis and posture has been mentioned previously. Wheatley and Moore examined eighty-four girls in the Boston School for Physical Education with this in view. These girls were examined at the beginning of the year and at the end of the first and second years. Roentgenograms of the viscera were taken and the posture examined. These girls were given systematic postural exercises. Their conclusions were that girls with good posture usually had no visceroptosis, and, further, that systematic physical training will bring about a coincident improvement in posture and visceroptosis.

Swanson studied 250 cases of pregnancy with regard to posture. He found what he called the lumbar index, which is obtained by making first a vertical line from the most prominent point of the dorsal spine to the most prominent point of the sacral spine and then making a horizontal line from the deepest point of the lumbar curve to this vertical line. It was normally between 30 and 40 cm. In pregnancy it averaged 49½ cm. The pelvic inclination was about ten points higher. His conclusion was that the length of labor increased with a higher pelvic inclination. Also he found a relationship between poor posture and various pelvic symptoms. He found also that all pregnant women have a tendency to develop poor posture following delivery and that they should be given a series of exercises.

Norman Miller made a study of dysmenorrhea and posture in 785 young college women. His conclusions were, although it was not justifiable to say that faulty posture and poor muscle tone caused dysmenorrhea, that a reduction in menstrual pain occurred, however, along with improvement in posture and poor muscle tone, as a result of directed physical exercise.

It is evident that mechanically the most obvious results of poor posture are in ligamentous and muscular strain. These lead to pain and aches of all descriptions. For example, a head carried too far forward results in strain on the neck muscles. This gives rise frequently to headaches. The pull on the shoulder muscles from round shoulders often gives rise to chronic strains and bursal inflammation. A female medical student was seen who complained of a constant pain just medial to the left scapula. She had had osteopathic treatments for years with temporary relief. She was given postural exercises and after three months her symptoms disappeared entirely.

Functional curvature of the spine, or scoliosis, results from poor posture. In these cases the left shoulder is usually higher; the curve is always a single curve, and there are no compensatory curves and no bone changes. If the posture be corrected these curves disappear.

If nothing be done, these curves become permanent and organic.

Someone has said that a woman was a constipated biped with a pain in her back. This is too often true. And usually those suffering from a pain in the back have a greatly exaggerated curve or lordosis.

Then there is the chronic foot strain, which is one of the results of poor posture. It is well recognized in the treatment of arthritis that the posture cannot be neglected. In the atrophic cases the posture in general is often at fault and should be helped if possible. And in the hypertrophic cases every effort should be made to eliminate strain on the affected joints.

I do not believe that poor posture results necessarily in trouble to the individual. I do feel, however, that here we have a potentiality of trouble which should not be ignored. I believe that I have said enough to emphasize one point, namely, that we cannot afford to neglect to examine the patient lying and standing when possible, in order to find out what is the individual's posture.

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Professional Building.

DISEASES OF THE UPPER RESPIRATORY TRACT IN CHILDREN.*

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In this symposium it is our purpose to consider only infections of the upper respiratory tract which are covered by the term "common cold." Hence, such specific infections as diphtheria, Vincent's angina, follicular tonsillitis, etc., are purposely omitted.

From December to April in this climate the average physician spends most of his time in the treatment of the various types of respiratory infections and their complications. They come in recurrent waves of ofttimes epidemic proportions, and vary in intensity from a mild coryza with no constitutional symptoms to a terrific infection of the entire respiratory tract with severe and dangerous systemic involvement. They cause more loss of time from work and school than any other type of disease, and hence their prevention and treatment should be one of the most important problems that confronts scientific medicine today.

While no age is exempt, those most susceptible and chiefly affected are school children between the ages of four and seven years. The morbidity is so high among these children that over 50 per cent are reported absent from the kindergarten and lower classes during certain seasonal epidemics. Indeed, it would seem an advantageous procedure if the two lower classes of school could be closed from January to May and kept open during the summer months when the incidence of sickness is comparatively low. And certainly a more strict health department supervision should be established over these cases. It seems absurd that the harmless cases of chicken-pox, German measles, et cetera, are excluded from school for weeks while the infections which with their complications and sequelae cause more permanent crippling than all the other children's diseases combined should be allowed to run rampant. A regulation which would quarantine a child at the first sign of a "snuffle" would do much to stamp out this paradoxical condition.

The work of Long, Dochez, and others has

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shown rather conclusively that the common cold is due primarily to a filtrable virus, to date microscopically invisible. This virus not only may produce the coryza itself but is capable of stimulating to greater activity other pathogenic organisms present in the nasal passages, and it is the growth of these organisms which cause most of the prolonged effects and complications—often worse than the cold itself.

Briefly, these infections can be conveniently discussed under three headings: (1) Acute Rhinopharyngitis; (2) Subacute Rhinopharyngitis; (3) Acute Pharyngeal Infections.

Acute rhinopharyngitis quite commonly occurs in infants and young children as a result of sudden changes in temperature, living in over-heated apartments, and exposure to direct infection from some member of the household. There is, at first, a constant serous and later a muco-purulent nasal and post-nasal discharge, little or no fever, irritability, restlessness in sleep, loss of appetite and disturbances of digestion, especially in young infants. Older children may complain of chilliness and fullness in the head. A cough, more pronounced when lying down, is frequent and is due to the post-nasal discharge. More severe types frequently appear to start as an adenoiditis or uvulitis, or in the naso-pharynx and rapidly spread forward and downward. Adenoiditis frequently is the cause of an unexplained sudden high fever in a child.

While rhinopharyngitis is usually mild and self-limited to one or two weeks, it should be promptly treated to prevent complications and spreading to the lower respiratory tract. In the order of their importance, I would emphasize the following treatment measures: First, bed rest. The grandmother to the contrary notwithstanding, a child can be made to stay in bed, or at least kept from running around the house, up and down stairs, to the cold front porch and back to the hot kitchen, subjecting his mucous membranes to frequent changes of temperature, exhausting his energy, and spreading his own mucous indiscriminately hither and yon. He should be kept in a room of even temperature, well ventilated but emphatically not too cold. Fresh air does not have to be cold air.

Second, local applications to the nares to establish normal drainage and comfortable breathing, especially in the nursing infant. Plain liquid petrolatum, unmedicated, may be instilled into the nostrils at frequent intervals, or a few drops of normal salt solution containing 20 minims of adrenalin chloride to the ounce. More recently a one-half per cent solution of ephedrine in oil or ephedrine in the form of a nasal jelly has given excellent results, and its administration has been attended with less violent resistance on the part of the young patient. The promiscuous use of so-called germicidal preparations in the acute nasal conditions, especially by the laity, should be condemned. As yet there is no evidence to show that their use in any strength and dosage does not do more harm than good. Over-treatment must be avoided. It is unwise and unnecessary to instill more than two or three drops, at the most, of any solution into the child's nose. More than that is usually swallowed and may cause vomiting and digestive symptoms. I have seen prescriptions reading, "ten drops in nostrils every four hours."

And, third, a light nournishing diet, a mild laxative and the judicious use of acetylsalicylic acid for fever and restlessness will hasten recovery. In older children the old-time tried and efficient Dover's powder has still a place.

Subacute Rhinopharyngitis

Under this heading are included the cases of persistent or recurrent nasal and post-nasal discharge frequently accompanied by harassing cough and chronically inflamed pharynx, due to the constant post-nasal droppings. There may be more or less involvement of the accessory sinuses, especially the antra. They frequently are subject to lymphoid hyperplasia, and early removal of adenoids and tonsils may be necessary to effect a cure. Even after the operation, there is a tendency to formation of tiny islands of lymphoid tissue in the naso-pharynx which may easily become the seat of infection. The general condition of these children is below par, they tire easily, appetite is poor, they may be pale with dark shadows under the eyes and the breath is foul. A subacute bronchitis is a frequent sequela. Occasionally they run a low P. M. fever and are prone to develop tuberculosis. In fact, it is common to find suspicious mediastinal glands appearing in X-ray pictures of the chest. They apparently catch one cold on top of another during the winter months. There is generally found some older member of the family or a servant who has chronic catarrh or sinusitis, and it is

obvious that these individuals are carriers of the infection, especially if their personal hygiene is not of the best. The slightest exacerbation of their own catarrh produces a corresponding flare-up in the child.

The treatment of these cases must be painstaking and persistent. Local measures, such as shrinkage of the nasal mucosa, irrigation and drainage of the sinuses when involved, are absolutely necessary, and here the cooperation of a competent rhinologist is essential to a successful outcome. Removal of excess lymphoid tissue is indicated even if necessary to repeat the operation several times.

Hygienic treatment is important. Here again these children should not be required to sleep in a cold room or forced to take cold baths and other radical measures "to harden them up." They should be protected from other members of the family who may be "carriers," and susceptible young children should not be left in the care of a nurse unless she is free of catarrhal conditions. How often do we see a nurse-maid or even a parent use her own soiled handkerchief on the nose of the child.

Iron tonics are of benefit when secondary anemia is present, as it often is. But more important still is the dietary management. Food rich in vitamin A should be pushed to the limits of digestion. It is a noticeable fact that individuals, especially children, who crave fats and eat considerable fat meats and food rich in fats are peculiarly resistant to respiratory infections and are able to throw them off quickly when infected. Egg yolk, milk, butter and fat meats, supplemented by liberal quantities of cod liver oil, should be encouraged. Sun baths when feasible without chilling or the use of a good ultra-violet lamp are of considerable value. In chronic cases, those financially able will effect a permanent cure much more rapidly by spending a winter or two in a warm dry climate. Often a stay of even two or three weeks will clear up a stubborn sinus cold in a young child where months of strenuous treatment have proved unavailing. Vaccine treatment will be taken up in a later paragraph.

Acute Pharyngeal or Throat Infections

These include infections of the pharynx and usually neighboring structure, such as tonsils and uvula and may spread to the nose and lower respiratory tract. In fact, most respiratory infections start as a simple pharyngitis or uvulitis. They are perhaps the most frequent of children's diseases, and are variously designated "grippe," "acute pharyngitis" or, when in epidemic form, called "influenza." The symptoms vary in intensity from a mild reddening of the pharynx and fauces, with a slight fever and nervous symptoms lasting one or two days, to an intense inflammation, spreading to the entire respiratory tract with such severe constitutional symptoms and frequently dangerous complications that a fatal outcome cannot be avoided. When of this type, it is frequently found that the offending bacterium in cultures taken from the infected parts is one of the more virulent forms of streptococci, especially the hemolytic strain, which undoubtedly has been stimulated into violent activity by the "cold virus." Otitis, mastoiditis, meningitis, pan-sinusitis, retro-pharyngeal and cervical gland abscesses, and the pneumonias, are frequent complications of such an infection.

In a typical case the onset is usually very sudden, with vomiting, irritability, sudden high fever, chill in older children, prostration and pains in the back and limbs. Infants will frequently cry out from the soreness and evident pain caused by handling. Nasal discharge and cough may not be present for several days or at all if the disease is arrested. Usually, however, they become prominent symptoms as the inflammation spreads. A child will seldom complain of sore throat even though it may be present. Blood findings are not significant except in severe cases, when a leucopenia may be found. The vomiting in young children is frequently almost uncontrollable and out of all proportion to the apparent mildness of physical signs. In some epidemics the vomiting is so pronounced and seems to spread to other members of the family so easily that it has been suggested as a definite clinical entity, aptly named "epidemic winter vomiting." The term "intestinal grippe" does not seem sufficiently descriptive for this type of case. Whether the incessant vomiting is due to toxemia or is a gastritis produced by swallowing infected mucous from the naso-pharynx is as yet undetermined.

The treatment may be divided into abortive and symptomatic. If a case is seen within the first twenty-four hours and the uvula or pharynx found to be injected, careful swabbing with 3 per cent nitrate of silver will frequently arrest the attack. Whenever possible

it is better to use daylight or reflected sunlight in examining the throat of an infant or child as the artificial lights in common use may give a false impression of the redness present. Here also the indiscriminate and reckless swabbing of a child's throat with germicidals of doubtful value by the physician or parent should be discouraged, especially if the symptoms have already spread beyond the pharynx, as little but harm can result. This, of course, does not apply to cases of follicular tonsillitis or membranous forms of angina which are not included in the scope of this paper.

The symptomatic treatment is the usual measures for the relief of pain, fever and cough, and local applications, as mentioned under acute rhinopharyngitis. The control of incessant vomiting may call for bismuth by mouth, cracked ice, and a mustard paste or ice-bag to the pit of the stomach. Fluids should be pushed but given in very small quantities at frequent intervals to prevent vomiting. In severe cases it may be necessary to give fluids by rectum or subcutaneously in order to avert an acidosis which is frequently a dangerous complication of these respiratory infections in children. Here, again, I would stress the importance of keeping these children in confinement not only for forty-eight hours after the temperature becomes normal, but until the respiratory symptoms have completely subsided. Relapses and delayed complications may be very frequent otherwise.

Vaccines have not as yet established themselves as a specific cure, though some report fair results from their use. As a prophylactic, however, against respiratory infections, they have given such uniformly good results when properly administered that their more frequent use should certainly be encouraged. We have used them in a sufficient number of cases during the past two winters to convince us that they have a distinct value, especially in that type described under subacute rhinopharyngitis where the child, or the whole family of children, suffers from recurrent colds once or twice a month during the winter. A stock mixed vaccine is used containing given numbers of killed bacteria representative of those found in the respiratory passages of all individuals subject to frequent respiratory infections. Beginning about the middle of November four injections are given three days apart. The initial dose should be one-half c.c. and increased by one-quarter c.c. at a time up to one and one-half c.c. depending somewhat upon the reaction. Young children stand rather heavy doses very well and a severe reaction is rare. These four injections protect the child for well onto a month when he begins to lose his immunity. Therefore, once a month during the winter and early spring he is given one injection of three-fourths to one c.c. of the vaccine. This keeps his immunity at its peak during the epidemic season. The cases under our care, even if they caught a cold, have shown such resistance as hardly to warrant any treatment, a far different picture from that they presented the winters before we undertook its use. While, of course, these vaccines are not specific, inasmuch as the cold virus itself has not been isolated, we do know that the bad results of the infection are produced by the accessory bacteria, and it is these prolonged effects and complications that we hope to prevent with our vaccines. Unsatisfactory results are usually due to insufficient initial dosage and failure to repeat it at regular intervals during the winter season.

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WHAT MAY BE EXPECTED FROM ADEQUATE INSTITUTIONAL CARE AND TREATMENT OF PSYCHOTIC CHILDREN.*

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The subject assigned me, I take it, refers to the institutional care and treatment of children (persons of 18 and under) who are the subjects of mental disease or mental defectiveness.

Dependent, Defective and Psychotic Children: I think it is now conceded by all authorities that *dependent children* of average or normal mentality should be cared for in institutions only as a last resort and where the home is impossible or a proper foster home and foster parents cannot be secured. In other words that a poor home with normal relationship of parent and child is better than a rich institution with the best artificial substitute for that relationship.

For the child of *defective mentality* the question of institutional care versus home care must be determined by a study of such major con-

*One of a group of papers read before the Virginia Conference on Childhood and Youth, held in Richmond, November 23-24, 1931.

siderations as the degree of defectiveness, the personality of the child, the personality and the mental and material equipment of the parents, the possible ill effects upon other children of the home as well as other considerations in indiviual cases.

As such a large number of things are to be considered and weighed carefully, it is impossible in the time at my disposal to compare with any degree of satisfaction the advantages or supposed advantages of institutional care such as the protection of the child from vicious companions, the instruction by trained teachers, etc., with the love and affection of parents and other attributes of a normal home; nor would I presume to discuss the care and treatment of the feeble-minded before an audience made up largely of specialists and practical workers along this particular line.

Therefore, I have delimited the scope of my remarks and what I shall say refers solely to the child who is the *subject of a psychosis*, to the child who is suffering from a mental disease if you please.

Importance of Institutional Care for the Psychotic Child: Lest there be any question in your minds, let me say that no such considerations as I have mentioned in connection with the dependent child of normal mind, or the child of defective mentality, are entitled to the dignity of determining factors in deciding the question of institutional care and treatment of the child suffering from a psychosis or mental disease.

The early diagnosis and the prompt hospitalization of these cases frequently spells the difference between cure or restoration of the patient and the permanency of the disease.

"The periods of life (says Dr. White) at which a latent tendency to mental disorder may crop out are the physiological epochs—puberty, adolescence, puerperium, the climacteric and the senium, and mental disease at these epochs, except the senium, indicate serious deficiency in capacity for biological adjustment." One of the most important of these periods is that of puberty and it is at this period that most careful observation is indicated in such cases as have an inherited predisposition or as show symptoms suggestive of possible mental disturbance.

The problem is to have a sufficient understanding of character to be able to pick out those types liable to develop psychoses and protect them from that class of stresses that they are least able to withstand.

There is need for considerable research along this line, for our knowledge is here far from complete, and all but insurmountable difficulties present themselves to us. A complete life history of the adult population in our hospitals for the insane would, I am convinced from recent studies, show that in over 50 per cent the psychosis had its beginning in a temperamentally abnormal make-up, or maladjustment discernible in childhood. Unfortunately what the institutions get is too often the "end product."

The most encouraging effort now being put forward is the work which our Bureau of Mental Hygiene of the Department of Public Welfare is doing in trying to detect abnormal mental trends in childhood and youth.

The child of dull intellect, the one with patent peculiarities, the shy and seclusive, should be and now frequently is brought under the observation of a competent psychiatrist, but it is the young person of brilliant, perhaps precociously brilliant faculties, the pride of the parents and friends, who may be most in need of protection.

Comparative Results of Institutional Care in Children and Adults: As showing what results may be expected from institutional care and treatment, a study of the following table covering and comparing with other ages all cases under 19 (excepting the feeble-minded) admitted to the Central State Hospital, during the past seven years, is enlightening.

Ten per cent of the insane persons admitted were under 19 years of age.

The ratio of total discharges to total admissions was 35 per cent.

The ratio of insane persons discharged to insane persons admitted was 36 per cent.

The ratio of insane persons (under 19) discharged to insane persons (under 19) admitted was 52 per cent.

Nearly 13 per cent of all discharges were of insane persons under 19 years of age.

It seems, therefore, we may expect a recovery rate among these young classes of 52 per cent as against 36 per cent among those above 19. Recovery is, of course, a relative term, but for practical purposes we may consider those recovered who are able to leave the institution and make a satisfactory adjustment at home or in an environment on the outside adapted to their condition, or in other words when they cease to become a social and economic liability.

Need for Separate Institutions for Psychotic Children: These results of treat-

DATE	Total 1st Admission All Classes	Feeble-minded Admitted	Insane Admitted	Insane Under 19 Admitted	Total Discharged	F. M. and Not Insane Discharged	Insane Discharged	Insane Under 19 Discharged
1924–25	455	47	408	53	105	7	98	25
1925–26	491	37	454	47	116	5	111	22
1926–27	474	31	443	39	178	9	169	25
1927–28	502	31	471	48	248	5	243	24
1928–29	526	72	454	44	222	14	208	26
1929–30	557	79	478	37	192	22	170	18
1930–31	569	81	488	42	201	27	174	22
	3,574	378	3,196	310	1,262	89	1,173	162

From the tabulation above the following totals and percentages may be noted:

Total 1st admissions (all classes), 7 years.....3,574.
Feeble-minded admitted, 7 years..... 378.
Insane persons admitted, 7 years.....3,196.
Insane persons under 19 years of age admitted, 7 years..... 310.
Total discharged (all classes), 7 years.....1,262.
Feeble-minded and not insane discharged, 7 years..... 89.
Insane persons discharged, 7 years.....1,173.
Insane persons under 19 years of age discharged, 7 years..... 162.

ment which I have just mentioned have been obtained with us under the most adverse condition for, because of the congested state of the hospital, we are forced to treat and care for many of these children in the same wards with older patients. No children's wards are at present available except those for the feeble-minded.

Because the majority of the patients of our state hospitals for the insane are adults, the care and treatment is largely in the direction most suited to adults. The peculiar needs of children are often overlooked. They are overshadowed by the larger number of adults. The thoughts and activities of the physicians, nurses and the attendants are all along adult lines and the needs of the occasional child are not uppermost as they should be, and he is simply one of the general population. Too often are we surprised to find the child included by a careless attendant in a company of adult workers performing tasks and in company totally unsuited to his welfare.

Often is the child who has peculiar behavior exploited by ignorant employees to "do his stunt," be it preaching, exhorting, mimicking others, or what not. From my experience of over twenty years, I might enumerate at length the disadvantages to be found in mixing the psychotic child with the psychotic adult, the deteriorated, the epileptic and, even I may say, with the feeble-minded.

What I have said applies to my own institution but it is equally applicable to a large extent to the other institutions for the insane of our state.

Therefore, I would earnestly stress the need of a separate institution for the care of the psychotic child, rather than a ward or department in the existing institutions which are now taxed to the limit to care for the other classes, particularly the senile, the burden of whose support the localities have found out how to shift to the state.

My reason for this, as has been hinted, is that adequate hospital care for children with psychoses, or in danger of developing psychoses, presupposes a rather highly specialized department of psychiatry, particularly a personnel of physicians, nurses, attendants and administrators trained along this special line.

Pending the establishing of such an institution where not only the definitely psychotic child could be treated but where incipient cases could be studied by trained experts, a separate department in existing institutions might be set apart for this class, with its own dining hall, school room, occupational and recreational room, and a personnel temperamentally adapted to such work and with at least some special training.

Given at least this, I am satisfied from the results which we have observed in our own institution, under the most adverse conditions, that the percentage of recoveries will show a decided increase and will be most gratifying.

In concluding, let me say again that delay in seeking adequate institutional care all too often means the establishment of permanent abnormal mental habits. The idea of hospitalization stigmatizing the patient is happily

growing less and less as people are better informed and are taught to look upon hospitalization as an effort towards cure rather than as a kind of jail to seclude them from society. It is often more of a stigma for the insane child to remain at home where his abnormal behavior is evident to all and sundry.

The environment of the home and the solicitude and sympathy of parents constitute still a problem which must be met by the patient, intelligent, sympathetic physician.

My message in a word is to urge that every effort be made towards an early diagnosis of mental disease in children and that proper hospitalization be effected as promptly as possible, after which, in the light of experience, we have every reason to "thank God and take courage."

THE MENTAL HYGIENE PROBLEM OF THE SUPERIOR CHILD.*

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There is a differentiation to be made between the superior child or youth and the mentally superior child or youth. The first embraces the whole individual character, personality and mind, and the second deals only with the intelligence. In either instance the youth in many respects, or in one respect, is super-average and, if the word average is synonymous with normal, then in both instances the child or adolescent is abnormal. On the other hand, in either instance he may be considered especially endowed. A child or youth may be superior in only one subject, music, art, English, mathematics or whatever it might be. It would be better, I believe, after the three R's are attained not to have standardized graded classes for these young people, but to let them go up in those subjects in which they showed special aptitude and stay average or even go back in those subjects with which they had difficulty. At any rate, it needs especial attention.

In comparison to the superior child, far too much attention has been given the inferior or sub-normal child. It is not, in my opinion, going too far to say that every youth of superior intellect, whether superior in character and personality or not, should be carefully examined, and, if necessary, psychologically and medically guided. The brilliant child is just as much in need of mental hygiene as is the stupid child. It is as much a problem for a student to be a grade or two advanced as it is for it to be a grade or two behind.

But how are we to separate the superior pupil from an average or inferior one? Surely not by class gradings. By no means is it true that the upper ten in a class, let us say of fifty, are superior. An inquiry into their attainments in after life will convince us of the truth of this assertion. Surely not by examinations. A child with a photostatic memory may cram for these examinations and know practically nothing of the subjects either before or after the examinations. Surely not by the various intelligence tests. These are mostly mere tests of alertness, mental agility and of superficial mentality, not of brain power or of deep thinking ability. Several years ago we tested the freshmen at the Medical College of Virginia and compared these findings with the students' record in college three years after and the correlation was only 30 per cent.

There are definite disease conditions that may make a child bright or apparently bright. The stimulation of the slight temperature of tuberculosis, the increased metabolism of moderate over-secretion of the thyroid gland, the transitory increase of pituitary gland secretion, the exhiliration of mild mania and the body chemistry changes of early dementia praecox may speed up the mental reactions, increase the child's class marks and give it all the appearances of mental brightness. One of my patients, a child who had been considered among the dullest in his school, had an attack of encephalitis (inflammation of the brain) and afterwards became to be considered one of the brightest children in the school. He rounded up in a reformatory.

I am always apprehensive over the "upper ten," more so, perhaps, than over the lower ten in any class. The mentally superior pupil creates a problem for himself. His associates, because of his advanced intelligence or class standing, are usually among those who are older, with whom he cannot compete in physical age and, hence, in games, social functions, sex knowledge and many activities; therefore, he is apt to be teased and imposed upon, or is not included whole-heartedly in the group, and, losing the free associations of childhood and youth, he may become indifferent, seclusive or conceited, or he may attach himself to the apron strings or to the coat tails of a parent

*One of a group of papers read before the Virginia Conference on Childhood and Youth, held in Richmond November 23-24, 1931.

or of some other older person. More than this, he may, and often does, develop emotional disturbance, sensitiveness, suspiciousness, prejudices, fears, undesirable habits, bad conduct traits and some of the various complexes we hear so much of these enlightened days. Then there may, and usually does, follow that train of physical complaints—headaches, fatigue, eye strain, anemia, indigestion, constipation, flushings or chilly sensations and nutritional disturbance for the correction of which the drug manufacturer and the special-food exploiter are breaking their necks in competition. The chief difficulty is that neither of them correct these youngsters and the mental hospitals or the grave yards gather many of them during early adult life.

The whole subject needs deeper and far more extensive consideration than can possibly be given it in this brief paper. It must be determined whether a child or adolescent is apparently or really superior, whether the potentialities of superiority are permanent or transitory, whether the superiority is or is not having a deleterious effect in whole or in part, whether the brilliant but peculiar youth may not be a candidate for insanity, whether infectious or other disease is playing a role, whether the youth it not becoming socially and environmentally maladjusted, whether the child or adolescent is injured by being bragged about and exploited and many other whethers.

Superior mental ability at any age is rare, but pseudo-superior ability, to whatever it may be due, is more or less frequent. In any event, whether pseudo or real, cognizance should be taken of the mental status of the individual.

Important, too, beyond words, is the protection of the really endowed child or youth so that its gifts in the bud may so unfold that a perfect flower will result. Superior endowment is rare. It has been said that there is only one eminent man to each two hundred thousand of a civilized population and only one illustrious man to each two million. It is easy thus to see that many face cards of the schools and colleges get lost in the shuffle and fail to show up in the deal of adult life.

212 *West Franklin Street.*

Choices have to be made. The important thing is to realize that we cannot choose once and for all. Outside forces are constantly changing the stage upon which we have to play our respective roles.—*Selected.*

FOOD AND FOOD HABITS OF THE PRE-SCHOOL CHILD.*

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The problems associated with food and food habits of pre-school age begin during infancy. The physical, mental, and moral health, and even happiness and success, in life are largely influenced by events, nutrition, and habits acquired during this extremely important, plastic, pre-school period. The importance of supervision during infancy is fairly well realized, and the care, supervision and immunization of the school child receives considerable attention. Pre-school examinations of large groups have shown as high as 90 per cent defects or abnormalities, which indicates sad neglect prior to this time. The problems arising during this stage of development have received comparatively little study, and are poorly understood, yet they warrant the attention of all agencies.

Physicians are not properly qualified, or do not devote sufficient time and thought to the problems of food, nutrition, and management of the run-about child to offer competent advice and impress the parents with the value of professional supervision. Handing out form printed diet lists according to the age of the child does not solve the problem. To properly study the problems of each child, and offer suggestions and advice requires considerably more time than a visit for a simple illness.

Nutrition is an index to the general condition. Malnutrition is not a disease, but does indicate that something is wrong. The diagnosis should be made only after a thorough physical examination. The height-weight-age tables are valuable, but must be properly interpreted. To keep the weight within the normal limits is a prophylactic as well as a curative measure.

The food element requirements differ slightly in proportions, but mainly in digestive adaptability at various ages. The protein requirements are higher during rapid growth. The caloric requirements vary with each individual, but are approximately 45 per pound (100 per kilo) each twenty-four hours at the end of one year, and decrease to 36 per pound (80 per kilo) at six years. About 35 per cent of the

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*Read before the section on Child Health of the Virginia Governor's Conference on Childhood and Youth, Richmond, Va., November 24, 1931, and The Roanoke Academy of Medicine, May 2, 1932.

intake should be supplied by fat, 15 per cent by protein and 50 per cent by carbohydrate.

Fat is supplied mainly by milk, butter, eggs, and meat. Fat has a high energy value, serves to control salt balance in the body, and most animal fats contain the fat soluble vitamins that are necessary for proper development and resistance to infections.

Protein is supplied by milk, eggs, meat, vegetables, and some cereals. Protein is necessary for cell growth, to replace lost body proteins, and may replace carbohydrate to some extent.

Carbohydrate is furnished by a large variety of foods, including fruits, vegetables, and grain products. Carbohydrate is easily digested, serves as the chief source of energy, is necessary for proper fat oxidation, and also serves as a protein sparer.

Mineral salts are necessary for life and growth and are furnished by milk, vegetables, fruits, and whole grain products.

The value of pigment has recently been stressed.

A high fluid intake is essential as a larger percentage of the body weight at this age is made up of water.

The public is over-educated in regard to vitamins by commercial exploitation. The average older child taking a properly balanced diet receives sufficient vitamins. The foods richest in vitamins are—milk, butter, eggs, fruits, vegetables and whole grain products.

The so-called "American diet" of white bread, meat and potatoes is deficient in many respects. Milk is rightfully classed as an ideal food, but has been over-stressed. The universal "quart of milk a day" slogan has left the impression that as long as this goal is reached, the question of nutrition is solved. Many children take excessive amounts of milk to the exclusion of other foods, and as a result are poorly developed, anemic, and demonstrate the usual "malnutrition or fatigue" posture, with large abdomen, even though the amount of subcutaneous fat appears to be normal. The use of sweetened condensed milk, except for short periods, deserves wide condemnation. It is an unbalanced food, and its use prevents proper development and invariably results in a poor eater.

Considerations for proper feeding: (1) Begin adding foods other than milk by the sixth month. The present tendency is to begin feeding earlier. Besides furnishing additional food elements, the child becomes accustomed to a variety of tastes and thus eliminates one of the later feeding problems. (2) Begin with starches and gradually introduce fruits and vegetables. (3) Prepare foods so as to conserve the vitamin and mineral content. Vegetables requiring cooking should be cooked in little or no water and the latter served with the vegetables. (4) Gradual addition of animal proteins. (5) Regulation of the amounts of milk, fats, and intense sweets. Frequently excessive amounts of butter, cream and sugar are added to the diet with the idea of increasing the caloric intake. The result is opposite from that desired, due to a decreased appetite and a lessened total food intake. (6) Give water freely. (7) Serve a light easily digested meal late in the day. (8) Serve three to four meals the second year, and then three meals with additional nourishment in certain cases. (9) No food between meals, and certainly not within two and a half to three hours of the following meal. This is probably the most common offense. Often parents, worried because their child is under weight and has a poor appetite, will give food between meals, usually some intense sweet, because the child will eat then, but is never hungry at meal time. (10) Exclusion of undesirable foods. Fried greasy foods, pastries, intense sweets, stimulants as tea, coffee, coco-cola, rich and highly seasoned foods, should not be allowed, or in any case reduced to a minimum.

Food problems are more habit problems than a lack of proper foods. The well child not eating is apparently a modern problem. The appetite is a sensitive indicator of the body's needs, but it is easily influenced. A child refuses food due to illness and is often manifest before other signs. Excitement, fatigue, or eating shortly before meal time may affect eating for that particular meal. Eating one food to the exclusion of others, or taking an improperly balanced diet, or undesirable foods should be mentioned; however, the important factors are faulty training and psychological reactions. The example of the parents is often reflected in the eating of the child, and applies to amounts and likes and dislikes. Emotional strain at meal time is a common occurrence, and results in an unpleasant period with little food consumed by the parents and children. The child of highly nervous, neurotic parents is usually a poor eater. Meal time is frequently

a period of special attention for the child. One refusal of food results in begging, bribes, petting and promises, and any time later the child has some wish, or feels neglected this is repeated with the desired results. Feeding the young is a maternal instinct, and the mother decides that the child must eat. The resulting nagging stimulates perversity, and creates a true negativism. The child's exaggerated sense of importance with a desire for attention, fostered by over-zealous and over-solicitous parents may be considered the keynote of the trouble. Many children much prefer punishment to being ignored.

General considerations for prevention and overcoming faulty food habits and poor appetites, in addition to those mentioned under proper feeding are, (1) The example of the parents. (2) Teach that all wholesome foods are to eat. (3) Form correct hygenic habits. (4) Regular meal time. (5) Serve wholesome foods in small portions to prevent discouragement by the sight of a large helping. (6) Avoid undue emotion and fatigue, especially near meal time. (7) No comment regarding dislikes and poor eating. An apparent Spartan indifference is much to be desired to an evident anxiety. (8) Meal time should be a pleasure period—free from excitement, and unpleasant discussions, with absolutely no nagging, threats, punishment, bribes or petting. (9) Encourage the child to eat alone and disregard an occasional accident and table manners. The latter will be acquired by imitation.

The importance of pre-school examinations should continue to be stressed, but should start five years instead of five months before school entrance. Proper periodic supervision is not an expense, but results in actual financial savings, besides frequently preventing suffering, anxiety, and regret.

The present mothers should be taught practical food requirements and management of her child, not from advertising propaganda, but by physicians, medical, health and welfare organizations. Future mothers should receive instruction while in high school, college or university.

Let us as physicians become more familiar with these problems which range from dietetics to psychology, and strive to remove the designations, neglected and poorly understood, as applied to the extremely important period between infancy and school age.

511 *Medical Arts Building.*

PHENOBARBITAL AND BELLADONNA IN THE TREATMENT OF HYPEREMESIS GRAVIDARUM.

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That there is no entirely satisfactory method of treating hyperemesis gravidarum is proved by the multiplicity of procedures. Until more is learned of the cause of this condition, treatment will continue to be based on empiricism, experiment or pure speculation as to its etiology. Disregarding the type of vomiting believed to be caused by reflex irritation from pelvic pathology, no tenable theory has been advanced which will account for the group of symptoms which characterize heperemesis. It seems probable that the cause may be found in endocrine dysfunction, but Hirst's theory of corpus luteum deficiency, logical though it may be, is not supported by therapeutic results. Thyroid and ovarian extract have also failed to be of marked value. At the present time, the most successful methods of treatment are frankly symptomatic. Though the cause is not known, there are certain facts, almost universally accepted, regarding the pathology, and in attempting to counteract these deviations from the normal, it is frequently possible to control the hyperemesis.

Of the various groups of symptoms to be treated, there are, first, those of toxemia due to the central degeneration of the lobules of the liver. As the disease progresses, starvation adds its toxins to those already present. Nervous and mental derangements are practically always present. In fact, the classical division of hyperemesis is into three types: reflex, neurotic and toxemic. The tendency at present is to recognize that the last two are so closely related that a better classification is reflex and neuro-toxemic.

The fact that degeneration of the liver impairs its glycogenic function has led to the incorporation into practically every method of treatment the supplying of carbohydrates to the system.

The tissues of the entire body become dehydrated, and the necessity for supplying fluid is universally recognized.

It is in the matter of quieting the nervous system that the wide variety of procedures has been developed. Practically every sedative drug in the pharmacopoeia has been used in the attempt to allay the irritation of the nerves

and the irritability of the stomach. To this list of sedatives, the writer has the temerity to add a combination of two drugs, each only rarely employed, and not mentioned in the literature in combination.

One of the most widely used sedatives is veronal. Its beneficial effects are fully recognized, but its usefulness is rather limited by the fact that frequently a dose sufficient to effect relaxation will cause delirium. Five years ago, after several distressing experiences with veronal, the writer began to substitute phenobarbital, which drug, in addition to being a sedative, is said to act on the vomiting center. At first it was given by mouth to ambulatory patients whose nausea was not sufficiently active to prevent oral medication.

A tablet of 1½ grains was given three times a day. When this dosage caused excessive drowsiness, the amount was gradually lessened. While this procedure did not immediately cure every case, it seemed to give relief to a greater degree than had any other drug. When luminal-sodium became available for hypodermic administration, its use was extended to those cases in which nausea and vomiting prevented the patient from taking any medicine by mouth. This proved to be a much more satisfactory mode of treatment. It was found that from one to three injections daily of 2 grains of luminal-sodium would cause the patient to sleep or at least to be very drowsy practically all of the time. After two or three days of almost constant sleep, the dose was gradually decreased so that by the end of a week the drug could be discontinued. In most instances, by this time, the patients were only slightly nauseated, if at all, and could retain food.

Owing to the difficulty of giving frequent injections to patients in their homes, this procedure is practically limited to hospital cases. While hospitalization is always desirable for hyperemesis patients and is absolutely necessary in all severe cases, it is at times highly inconvenient or impossible.

To accommodate certain patients whose symptoms were moderately severe but who felt that only extreme necessity would justify their entering a hospital, a rectal suppository containing 3 grains of phenobarbital was compounded. It was found that one suppository three times daily would produce practically the same effect as two hypodermic injections of luminal-sodium. The simplicity and effectiveness of this form of medication led to its adoption as a routine.

Frequently the character of the vomiting is suggestive of pylorospasm. This led to the addition of ½ grain of extract of belladonna to the 3 grain luminal suppository. This combination of phenobarbital and belladonna has proved to be more effective than any other drug or drugs previously employed.

Simple sedation of the patient, of course, is not sufficient treatment for hyperemesis. Certain adjuvant procedures are absolutely necessary. Perhaps a brief outline of the treatment of three types of hyperemesis, classified according to severity, will be of value.

In the mild form, the patient is nauseated only at certain periods of the day, usually in the morning on arising or late in the afternoon. One or two paroxysms of vomiting may occur, but in many cases the discomfort is limited to a constant sensation of nausea. The first indication for treatment is based on the fact that "the empty stomach is the sick stomach." The morning attack of nausea is probably due to the preceding 10 or 12 hour fast.

The patient is instructed to place beside her bed, within easy reach, two crisp soda crackers. In the morning, immediately on awakening, she munches the crackers slowly and lies flat on her back for 10 minutes before arising. Breakfast should be eaten as soon as possible and preferably should not be prepared by the patient, as the handling and smelling of cooking food frequently provoke vomiting. During the day, lest the stomach become empty, some food should be taken every hour, by the clock. The character and amount of the food may be left to the wishes of the patient, but due to the decrease in sugar formation by the liver, carbohydrate foods are to be preferred.

A 1½ grain phenobarbital tablet should be taken at 10:00 A. M., 4:00 P. M., and at bedtime. Should this dosage cause drowsiness, it may be gradually diminished by cutting one or more of the tablets in half, usually taking the whole tablet at bedtime.

In most cases this treatment will give marked relief, but must be continued until nature has established metabolic equilibrium.

In case the nausea is constant and vomiting occurs several times during the day with rejection of all food, the patient must be put to bed. A suppository containing 3 grains of phenobarbital and ½ grain of extract of bella-

donna is given three or sometimes four times a day. For the first twenty-four hours, absolutely nothing is given by mouth. This procedure gives the stomach a complete rest and also has some psychic value. At the end of the fast the patient is usually so hungry and thirsty that she will make every effort to retain food. Nourishment should be given every hour, solid food being the first offered to the patient, as fluids are more likely to be vomited. The diet should be largely carbohydrate, and after feeding has been started fluids should be given to the limit of tolerance. If the patient is sleeping soundly, it is perhaps better to awaken her for food only every two hours. Should she express a wish for any article of food, no matter what, it should be procured for her, as food that is desired is more easily retained.

After two or three days of sleep, the daily number of suppositories should be reduced to two, then to one, and in seven or eight days should no longer be necessary. During this period of treatment the patient should be isolated, as completely as is possible. Visitors should be strictly prohibited, as discussion, either sympathetic or pessimistic, tends to aggravate the symptoms.

Should the patient fail to improve under the treatment just outlined, hospitalization is imperative. A private room is absolutely necessary as the presence of other patients in a ward is more harmful than the occasional visitors in the home.

In these cases, a twenty-four hour period of fasting begins the treatment. Three or four phenobarbital and belladonna suppositories are given daily. A retention enema of six ounces of a 5 per cent solution of glucose is given every four hours, in order to supply both sugar and fluid. This is best given about one hour after the suppository has been inserted.

If, after the end of the first twenty-four hours, solid food is not retained, the fast is continued for another day. Five hundred c.c. of a 10 per cent solution of glucose are given intravenously twice daily until food and fluids are taken by mouth in sufficient quantity.

Certain cases of hyperemesis gravidarum will not respond to any form of palliative treatment and the life of the patient may sometimes be saved only by the interruption of pregnancy. The change from a condition which may be treated successfully by palliative measures to one in which the life of the patient may be saved only by therapeutic abortion is frequently so insidious as to require the nicest judgment on the part of the obstetrician. In general, it may be said that a continued pulse-rate of 120 or over, fever and jaundice, are strong indications for emptying the uterus.

1835 *Eye Street, Northwest.*

ENDOCRINOLOGY.*

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The Ayurveda of India, since 1800 B. C., contains reference to organotherapy, and such therapy of disease is largely described and advocated by Hippocrates, Celsus, Pliny, Aristotle, Paracelsus, Galen and many others. Some of these writers show some knowledge of the structures and functions of the glands involved; and the extent of their use may be deduced by the statement of Biedl that, in 1765, the apothecary shops of Innsbruck stocked 152 products of animal origin.

Theophile de Bordeu, in 1775, was first to clearly formulate a general theory, largely speculative to be sure, but very similar to our present most widely accepted understanding of this subject. He stated very clearly that each organ serves as the laboratory of specific substance which enters the blood, and there, permeating the body, is useful and necessary thereto to maintain its integrity.

Legallois, in 1801, believed that the blood underwent changes resultant of acquiring substances from the various organs through which it permeates; and Berthold, in 1849, experimentally demonstrated the production of substances that exerted profound effects on the animals in the internal secreting tissues.

In 1855, Claude Bernard, in his work on Glycogen, designated these as *inner secretions*, and the word endocrine (from the Greek endo, meaning within, and krino, I separate out) is the widely presently used designation and the one which I use in my title for these substances. Other words of similar Greek derivation—hormone, chalones, autocoids, etc.—have been suggested, but perhaps only the usual designation of the Germans might be preferred for universal use, *incretion.*

We have rapidly outlined the precursors in this subject of endocrinology but, with the full knowledge of it all, there can be no hesitation in dating the beginning of *endocrinology* from the now world famous lecture of Brown-

*Read before the Monongalia County, W. Va., Medical Society.

Sequard, on June 1, 1889, whose announcement of the startling therapeutic activity of the testicular endocrines excited the wide international attention and further expermimentation which his preceding years of exhaustive study and the demonstration of endocrines has not before received.

The work of Brown-Sequard, his position as Professor at the College of France, the highest grade scientific institution in the world, and the very brilliant group of his collaborators, disciples and successors caused the world wide rapid interest and development of this subject. Brown-Sequard and d'Arsonval, in 1891, expressed very accurately our present-day theory of endocrines, as follows: "We admit that each tissue and, more generally, each cell of the organism secretes on its own account certain products, or special ferments—which through this medium influence all other cells of the body, a definite solidarity being thus established among all the cells through a mechanism other than the nervous system. All the tissues (glands or other organs) have thus special internal secretion and so give to the blood something more than the waste products of metabolism. The internal secretions, whether by direct favorable influence or whether through the hindrances of deleterious processes, seem to be of great utility in maintaining the organism in its normal state."

It must be recalled here that, in 1855, Addison, by clinical and pathological studies, had described the disease resulting from the destruction of the suprarenals.

Today we know quite well the endocrines of the pituitary, thyroid, parathyroid, adrenal and gonad glands; we know something about the endocrines of the prostate, insular part of the pancreas, duodenum, spleen, kidney, liver, mammary, thymus and pineal glands; and are daily learning more of their functions and reacting influences on the human organism—growth, promotion or retardation, pressor effects, metabolistic influences, sex reactions, etc. We find, also, and are using the special sympathetic effects, as indicated in our therapy of symptoms: epinephrine to raise blood pressure, pituitrin to provoke contraction of smooth fibered muscles, etc.

Recently the door is opening for commencement of comprehension of the close interlocking related interactions supplemental and oppositive stimuli of various endocrines; and, in far out-reaching action, to glimmer the direct endocrine influences on the vegetative nervous system of man. This vista is of tremendous import in human relations, as will be realized as we recall our present power to isolate exactly or synchronize many of these powerful endocrines, which directly influence growth, conception, etc., but. through their action on the vegetative nervous system, reach to the roots of control of human activity, control of well being and possible and inevitable death.

The limits of our evening will not permit our expansion of this concept and consequent theme.

Our study of endocrine function has taught us their independent, individual, so-called homo-stimulation effect; for example, we find symptoms of hypothyroidism due to the lack of sufficient activity of the patient's thyroid gland; and the use of thyroid endocrine immediately supplements the inefficient existing glandular supply and corrects all symptoms; or, further, we find that the injection of this endocrine into a person normally supplied induces symptoms that we have learned to be due to a too great activity of the individual thyroid gland; such action we designate as "*hemo-stimulation*," and in this action we have the so-called law of Hallion—"The extract of an organ administered in suitable amount has an elective stimulating action on the functional activity of the same organ in the patient to whom it is administered." The basic truth of this law is now well accepted, but the fullness of its applicability is not yet completely demonstrated.

At the beginning of endocrine therapy, they were secured and administered as whole gland extracts; subsequently, the extract was purified to remove more or less of non-utilizable matter, and constant progress has now given us in pure chemical, sometimes synthetizable form, the real active endocrine, even in crystalline form and unvariable chemical molecule—thyrotoxine, synthalin, etc.

The endocrine is apparently a substance with catalytic function, but should not be considered as an enzyme.

Clinical study has shown us an ever-widening series of pathological conditions quite directly resultant and often prevented by, or cured by, the corresponding specific endocrine. Of these, the best known are pathological states due to over or under activity of the thyroid gland, of the pituitary, etc.

Some cases of this kind are shown here to-

night—hypo- and hyper-thyroid, hypo- and hyper-pituitary, Mongolian idiot, hemophilia, diabetes.

There has been long dispute that much or all of the therapeutic activity of endocrines was destroyed by digestive processes; but this now is considered as of importance in only a few endocrines, such as insulin, and even in this the pure synthetized product is found to act as well when given per os as when hypodermically injected.

Much of the criticism and possible failure of early endocrine therapy was due to the lack of scientific control of the real activity of the products used in medicine. In recent years there has been close control of activity. Only proven products should be used, and they are then found quite effective for their claimed efficiency and action.

The close dosage and minute control of efficient action to the point desired when using pituitrin is beautifully appreciated by every obstetrician using it, and the same can be said by those expert in the use of epinephrine, insulin, etc.

We have learned the interlocking and mutually adjuvant actions of endocrines, viz., thyroid and pituitrin replacement values in general stimulations and on their reciprocal activities.

And we are commencing to observe the very positive action of injected endocrine to build up, even restore by new growth its corresponding defective gland. The hypertrophy of the pituitary gland in its effort to supplement by its activity a removed thyroid is well known to surgeons in that field, and experimental work has demonstrated conclusively that superfeeding of thyroid glands provokes rapid and marked hypertrophy of the adrenals. Herring, in his experiments in such feeding, shows an increase of 56 per cent in the weight of such supra-renal glands.

The inter-relation of the thyroid and gonad activities are so well known that, to a large extent, the thyroid therapy is very useful in cases or removed or inactive ovaries.

The well established deficiency of thyroid activity in advancing age has shown us its counter effect in causing senile impotence; and to such a degree is this realized in clinical practice that the use of thyroid extract for short periods every month as preventive of the threatened loss of sexual activity is advocated (particularly for intellectuals) and its value in retardation of the precursing symptoms of advancing years (gray hair, baldness, lessening vigor, etc.) is well recognized by our foremost clinicians.

There is an increasing belief that many of our rebellious skin diseases are to be controlled by correction of the corresponding endocrine deficiency.

At the present state of our knowledge of endocrine influence of the vegetative nervous system of man, we are able to make the two divisions, A—Acceleratory, and B—Retarding.

In A, catabolic-dissimilatory:
- (a) Thyroid
- (b) Hypophysis (posterior lobe)
- (c) Chromaffin tissue (supra-renal medulla)
- (d) Sex glands.

In B, anabolic-assimilatory:
- (a) Parathyroid
- (b) Hypophysis (anterior lobe)
- (c) Adrenal cortex
- (d) Interstitial glands
- (e) Thymus
- (f) Pineal
- (g) Insular part of pancreas

In general, B group are antithetic to those of Group A, but in some of them this antithesis is not certain.

Our time will not permit details of all of the endocrines but restricts us to consideration of a few that must serve as illustrative types.

Perhaps the best known of all endocrines is that of the thyroid gland of which the active principle is a pure chemical, crystalline substance—*thyroxin*.

The thyroid is of absolute necessity for normal development and growth of the body; its atrophy results in cretinism, where the failure of physical and mental growth is manifest, growth fails almost entirely, ossification fails, mentality fails, everything in line of development seems arrested. Thyroid supply corrects these failures; thyroid starvation causes or reproduces them.

An excessive supply of the active principle, as in hyperthroidism produces, in sequence and importance:

1. Tachycardia
2. Great depression in blood pressure
3. Increase of basal metabolism
4. Increase of protein metabolism
5. Decrease of elimination of solids
6. Diminution of assimilation of carbohydrates and in extremis spontaneous glycosuria
7. Sweats
8. Mononucleosis
9. Tremor
10. Diarrhea
11. Psychic agitation

A particular combination of above with exophthalmia is the syndrome well known to us as exophthalmic goitre (Graves' disease).

Advanced knowledge of endocrines has perfected such a variety and exactitude of clinical tests that the deficiencies or surplus of such can be accurately measured and treated by suitably graded dosage. Such testing has enabled the clinician to determine various degrees and types of disease according to the variable of deficiency or surplus endocrine, as, for example, in case of the thyroid we have distinctive types of hypo- and hyper-thyroidism, according to their symptoms as follows:

HYPER-THYROIDISM

Increased basal metabolism
Increased nitrogen metabolism
Increased carbohydrate metabolism
Diminished carbohydrate tolerance
Delicate soft moist skin
Tendency to sweating
Fine lustrous hair
Rapid heart and pulse
Palpitation
Tremor
Emotional instability and mental alertness
Asthenia and fatigue
Lymphocytosis (eye signs)
Long slender bones
Long slender fingers
Teeth, pearly white, well formed

HYPO-THYROIDISM

Reduced basal metabolism
Increased carbohydrate tolerance
Lowered temperature
Shortened stature
Irregular development of epiphyses of long bones
Short stubby fingers
Slow heart and pulse
Thickened, infiltrated, dry rough skin
Loss, or scanty, brittle dry hair
Mental dullness
Slow movements
Thinning outer third of eye-brow
Thickened mucosa of the mouth and thick enlarged tongue
Teeth, irregular, poor and delayed dentition

Early detection of these symptoms permits, by appropriate therapy, their correction or cure, and in many of them prevention.

AN ATYPICAL CASE OF TYPHOID FEVER.

ALLEN H. MOORE, M. D., Doylestown, Pa.

Typhoid fever is the most common continued fever and is widely distributed throughout all the countries of the world. In spite of marked advances in sanitary engineering and preventive hygiene, this dreaded disease still stalks abroad with its fearful toll of existing morbidity. Epidemics are not nearly so common as they were prior to the World War but the disease is still too prevalent and is endemic in some of the remote rural sections of the United States.

Typhoid fever is pre-eminently a disease of youth and early adult life. Infants under the age of two years are relatively immune. Some authorities state that the disease is quite exceptional after the age of forty. This has certainly not been my experience. Tabulated records of the Surgeon-General's Office are apt to direct attention to a number of cases of the Nation's youth but they do not publish a record of the number of isolated cases of typhoid in adults past forty in certain rural sections.

Typhoid fever may be so erratic in onset and progress that identification from the symptom complex alone is very difficult, often impossible. No symptom or sign is necessarily present and no symptom or combination of symptoms is impossible. A most searching investigation may fail to reveal a local infection, a complication, or any other cause other than the typhoid septicemia itself. Conner asserts that chills in many of these cases that are obscure are due to a latent Thrombophlebitis.

The importance of blood cultures will be realized when it is remembered that a positive blood culture is the only piece of evidence which stands alone incontrovertible. The Widal reaction is open to occasional sources of error even when carefully controlled. The time to take a blood culture is when the patient suspected of being infected with typhoid or para-typhoid A or para-typhoid B is first seen. The chance for a successful blood culture in typhoid fever diminishes somewhat after the first week and diminishes rapidly after the second week. A positive agglutination reaction can be obtained in about 90 per cent of all cases of typhoid fever at some period of the disease. It is a late symptom, rarely appearing before the eighth day, and is, therefore, of comparatively little assistance in making a diagnosis in the first week.

Typhoid fever may simulate many diseases and where the symptomatic trend is not typical the diagnosis is often most difficult if not impossible. In the differentiation of the disease, all of the acute febrile diseases must be passed in review during the first week or ten days. Those that must of necessity be ruled out are, scarlet fever, variola, measles, influenza, pneumonia, septicemias and local infec-

tions by the streptococcus, staphylococcus, gonococcus, colon bacilli and other organisms, appendicitis, acute enteritis, para-typhoid fever A and para-typhoid fever B, malarial fever, typhus fever, relapsing fever, cerebrospinal fever, tuberculous meningitis, trichiniasis, malignant endocarditis and syphilis. There are few infections that necessitate such an array of bodily infections for consideration as does typhoid fever.

The intermittent types of malarial fever bear no relation to typhoid fever. The onset of the remittent type and the estivo-autumnal types, however, may closely resemble the onset of typhoid fever. In very rare cases the two infections may be concurrent and produce a confused clinical picture. Quinin has practically no effect upon the course of typhoid fever. It promptly arrests the fever of malaria. There is no such clinical entity as typhomalarial fever as is so often erroneously assigned as a diagnosis.

I wish to present a case of atypical typhoid fever which gave no actual clinical clue as to its identity but which in many respects closely resembled an infection by the malarial plasmodium.

Case Report

A white female adult, age 21 years, a recent student in a Southern institution, began May 22, 1932, with a feeling of lassitude and toxicity. The following day the patient complained of a chilly sensation but she did not actually have a chill. On May 24th the chilliness continued and she began repeated vomiting. There was no temperature until this time. I saw the patient on May 25th, the fourth day after the onset of the infection. She appeared extremely ill. She was pale, toxic, nervous, chilly, and complained bitterly of a headache which had not responded to ordinary sedation. The temperature was subnormal. The vomiting continued and gastric lavage failed to relieve it. At 5:30 P. M. there was an initial chill of forty-five minutes' duration, followed by profuse sweating. The following day there was a second chill lasting sixty minutes, followed by a severe vomiting spell and more profuse sweating. The temperature at the height of this second chill was 104. This chill occurred at 7 A. M. At 12 o'clock noon the temperature was normal. The profuse sweating continued throughout the entire day. At 5 P. M. there was another chill lasting sixty minutes, followed by sweating. The temperature at 9 P. M. was 105 1/5. The following morning the temperature was normal. At 6 P. M. another chill came on, followed with the usual profuse sweating and with a return to a normal temperature. On the morning of May 29th, the temperature was subnormal (97) and there was no rise, above normal, in the temperature throughout the day. The sweating stopped immediately and did not return, nor were there any more chills. There was a marked improvement in the patient's condition both mentally and physically. On May 30th the temperature had not gone beyond the normal excursion and the general physical improvement continued rapidly.

The patient was very weak, anemic, nervous, and had no appetite. Her toxicity had entirely disappeared. She had lost several pounds in weight and it was quite evident that this patient had played immediate host to a sudden, severe and an unknown bacterial invasion.

Physical Findings: Repeated physical examinations failed to show anything of real importance in thrusting any light on the causative factor. The heart was negative. The pulse rate during the first several days of the attack was ranging between 120 and 130. The spleen was not palpable. The abdomen was soft and there was an entire lack of tympanites. The blood pressure was 110 systolic—78 diastolic. The knee jerks were much exaggerated. There was no evidence of rash of any sort.

Laboratory Findings: Urine: amber; turbid; Sp. Gr. 1.015; slightly acid; no sugar. Very slight trace of albumin; no indican; no acetone; no acetoacetic acid; occasional leukocyte (2 per field); erythrocytes 4 per field; no casts; no cylindroids; occasional vaginal epithelial cells; no crystals.

Blood: Erythrocytes 4,120,000; leukocytes 9,100; hemoglobin 65 per cent; polymorphonuclears 81 per cent; small monocytes 7 per cent; large monocytes 11 per cent; eosinophiles 1 per cent.

Malarial Plasmodium: Repeated smears were negative.

Widal Reaction: Negative for typhoid fever; suspicious for para-typhoid fever B. Bacillus melitensis negative; para-typhoid A negative.

Blood Culture taken on May 31, 1932, was negative.

The water supply for the home of the patient was examined and was found to be entirely potable.

Urine Typhoid Culture: Positive for typhoid bacilli.

Feces Typhoid Culture: Positive for typhoid bacilli.

The patient progressed so rapidly that within a week she was out of bed despite warnings as to the needed continued rest. There has been a rather prolonged return to normal but none the less progressive. Further laboratory examinations of the feces and urine were negative as to the presence of the typhoid bacilli.

Comment: One cannot but be impressed with the similarity of this case to a possible infection by the malarial plasmodium. The onset, the chills, the temperature curve, the profuse sweats and the profound toxicity certainly pointed to a malarial infection. The student residence of the patient in the South was seriously considered when making the tentative diagnosis. It is to be remembered that the bacillus typhosus was not recovered from the blood culture nor was there a positive agglutination reaction for typhoid. It was not until the positive cultures for bacillus typhoid in the urine and feces that a positive diagnosis was made.

This case demonstrates the real necessity for checking up on urine and feces for typhoid in all undetermined febrile conditions that are continued.

106 *East State Street.*

Correspondence

Fee for Treating Cases of Rabies.

To the Editor:

A good many years ago, I had a patient bitten by a rabid dog. The people were in moderate circumstances and, as the law provided payment for damage done by dogs, to be paid out of the dog tax, I presented the bill to the County Board of Supervisors that they might pay it for the patient. They said that the law provided for the payment for domestic animals bitten by rabid dogs but that it did not provide for the treatment of people so bitten

To save people the expense of treatment for rabies caused by dog bites, I got State Senator, Mr. W. H. Jeffress, to get through Legislature an amendment to the law so as to pay for the treatment of rabies out of the dog tax fund. The law now provides payment for treatment out of the dog tax fund, not to exceed $100 in each case.

Recently, Dr. Winn, of Clarksville, Dr. Varn, of South Hill, and I had patients bitten by rabid dogs. The Board paid Dr. Winn $30 for vaccine and the treatments in his case and he accepted it. Dr. Varn and I put in bills for $65 per case for furnishing vaccine and treatment, the vaccine costing $15. The Board likewise sent us checks for $30 for each case but we refused to accept the checks and called a meeting of the Mecklenburg County Medical Society that the members might go before the Board of Supervisors. Practically every member of our Society was present and, after some discussion, the doctors agreed that under the depressed conditions we should accept $50 per case for furnishing and giving the vaccine. Dr. Varn and I were sent checks for this amount and Dr. Winn an additional check of $20 for his case.

W. W. Wilkinson, M. D.

La Crosse, Va.
October 18, 1932.

Dr. Wilkinson, in a letter accompanying the above statement, says that the fee varies in different counties. He draws the inference that the results obtained show how important it is for the doctors in the various counties to be organized to meet such emergencies.

Woman's Auxiliary, to the Medical Society of Va.

President—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.

President-Elect—*Mrs. William L. Harris*, 1112 Matoaka Street, Norfolk.

Secretary—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.

Treasurer—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

Cooperation.

When you receive this number of the "Monthly," the annual meeting of the Auxiliary will have taken place and a new page written in the history of our organization. I hope there will be many excellent achievements recorded. This is the year for the election of new officers. I regret this letter has to be in the hands of the printer by October 15th, so I

cannot give you their names, but I bespeak for them your cordial cooperation.

No matter how efficient and faithful your officers or how excellent your program, the *success* of the Auxiliary depends upon the work and support of the individual members.

I will offer a few suggestions:

First—Attend the meetings regularly. If you cannot write a paper or make a speech, be an appreciative *listener*. Your presence will encourage the President.

Second—If possible accept cheerfully the work assigned you and always be willing to do your part.

Third—Answer letters *promptly*. Often a post card is all that is necessary and should be written at once. Nothing delays the work or is more annoying to a busy officer than to have to wait for days for a reply.

Fourth—Make *constructive*, not destructive, criticisms—the former are always welcome.

"A good thing to remember and a better thing to do—
Is to belong to the constructive gang and not the wrecking crew."

The President-Elect, Mrs. W. P. McDowell, of Norfolk, has been forced to resign on account of continued illness. Her resignation was accepted with sincere regret as she has proved a most efficient officer and has been deeply interested in the work of the Auxiliary. We pray for her a speedy recovery.

We feel we are, however, most fortunate in having one of our vice-presidents, Mrs. William Lett Harris, consent to take this office. Mrs. Harris made such an excellent record as president of the Norfolk County Auxiliary that we are sure, under her able leadership, the State Auxiliary will grow in numbers and usefulness and we must pledge her our cordial support.

The December MONTHLY will have a report of the Convention.

MARY GRAY HODGES,
President.

NOTES FROM MRS. W. J. FREEMAN, PRESIDENT OF THE AUXILIARY TO THE A. M. A.

Mrs. Freeman states: "I had the opportunity of talking with Dr. Bauer, head of the Education Bureau at the Americal Medical Association headquarters. I asked him what was the particular point he wished stressed, and he replied, '*Periodic* Health Examination.' Our Pennsylvania Auxiliary has for a number of years had a special standing committee on this subject, and an admirable leaflet issued by Mrs. John H. Page, chairman of this committee, has been copied in state journals all over the country, and will be found in Part I of the new state Handbook. The Periodic Health Examination ties in so perfectly with anti-tuberculosis and pre-school work, in which so many of our Auxiliaries are interested, that I have no doubt that you will be glad to cooperate with Dr. Bauer."

"A letter from Mrs. Wells, of Florida, contains the following paragraph: Dr. Cramp is the director of the Bureau of Investigation of the A. M. A. and has some delightful lectures on 'Patent Medicines' and 'Cosmetics.' His services are free, and possibly some other Auxiliaries may be glad to secure him on his way to or from Florida. Mrs. Wells writes: 'You will be interested to know that I have obtained Dr. Cramp for a week's tour of Florida some time in March, the dates contingent on the convention of the Federation of Woman's Clubs. I am so glad to have him speak to them.' A fine piece of public relations work."

SLOGAN FOR THIS YEAR—"KNOW YOUR AUXILIARY"

An excellent "Handbook" for use of officers has just been published. We are indebted to Mrs. McGlothlan for this helpful guide. It can be ordered directly through the chairman of Printing, Mrs. J. Newton Hunsberger, 514 West Main Street, Norristown, Pa. Price, 60 cents.

NATIONAL BOARD MEETING

The regular meeting of the National Board will be held at Hotel Pearson, Chicago, Saturday, November 19th, at 10:00 o'clock sharp.

Auxiliary to Norfolk County Medical Society.

The first Executive Board meeting of the Woman's Auxiliary to the Norfolk County Medical Society was held in the Medical Society rooms September 23rd. Plans were made for the winter's work, and committees appointed.

The regular Auxiliary meeting was held October 7th, with a large and enthusiastic attendance. The following members were appointed delegates to the State meeting in Richmond: Mrs. Chas. A. Saunders, Mrs. M. N. King, Mrs. C. C. Smith, and Mrs. N. G. Wil-

son. The Auxiliary sponsored a drive to raise funds for the Victory Memorial Tuberculosis Hospital, to be built near Norfolk. After the business meeting, Dr. Van Dusen made a very interesting talk on "The Child's Bill of Rights."

The former President of the Norfolk Auxiliary, and the President-elect of the State Auxiliary, Mrs. W. P. McDowell, is quite ill at her home in Larchmont.

The "Calendar" of the Woman's Auxiliary to the Norfolk County Medical Society for 1932-33 has just been issued. It lists approximately 150 members with a Junior Auxiliary of nearly twenty-five. The aim of the Auxiliary is stated as follows:

"The object of the Woman's Auxiliary is to be all that its name implies—an aid, a reserve force—an Auxiliary organized for the purpose of responding to any call from the Medical profession. To promote closer social contact between families of physicians. To assist in enlightening the burdens of humanity. To help preserve the health of the people. To recommend to all clubs that they place capable physicians' wives in charge of Club Health Departments in order to secure authoritative programs. To place *Hygeia* in every home, as it is the leading health magazine in the United States, and is published by the American Medical Association.

"Every physician's wife should feel it a privilege to be a member. A very important thing to remember is, you are different from all other clubs of women; most clubs are made up of women of varied interests, whose husbands come from all professions or trades. You are one profession, and must 'stick to that one trade.'"

Truth About Medicine

In addition to the articles enumerated in our letter of August 26th, the following have been accepted:

Abbott Laboratories
- Abbott's A-B-D Malt Extract with Cod Liver Oil and Viosterol 5D.

Jensen-Salsbery Laboratories, Inc.
- Undulant Fever Bacterial Vaccine.

Eli Lilly & Co.
- Gas-Gangrene Antitoxin (Combined).
- Tetanus-Gas-Gangrene Antitoxin (Combined).
- Plague Vaccine, Prophylactic, three 1 c.c. vials package.

National Drug Co.
- Tuberculin Intracutaneous for Mantoux Test.

G. D. Searle & Co.
- Tablets Chiniofon-Searle Enteric Coated ,0.25 Gm. (4 grains).

E. R. Squibb & Sons
- Typhoid Vaccine (Immunizing), one 5 c.c. vial package.
- Typhoid Vaccine (Immunizing), one 20 c.c. vial package.

Ulmer Laboratories
- Biliposol
  - Ampoules Biliposol Solution, 2 c.c.

The following articles have been included with the List of Articles and Brands Accepted by the Council But Not Described in N. N. R. (New and Non-official Remedies, 1932, p. 487):

Hollister-Stier Laboratories
- Protein Extracts Diagnostic-Hollister-Stier

McCormick & Co., Inc.
- McCormick's English Mustard.

United States Standard Products Company
- Vaccine Virus (U. S. S. P.)

The Wilber Co., Inc.
- Tablets Digitalis-Wilber.
- Tincture Digitalis-Wilber.

John Wyeth & Brother, Inc.
- Wyeth's Capsules Digitalis Leaf Defatted.

New and Non-official Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Normal Serum (From the Horse).—This product (New and Non-official Remedies, 1932, p. 357), is also marketed in bottles containing 100 c.c. The Cutter Laboratory, Berkeley, Calif.

Book Announcements

Hospitals and Child Health. Hospitals and Dispenaries. Convalescent Care. Medical Social Service. Reports of the Subcommittees: On Hospitals and Dispensaries, CLIFFORD G. GRULEE, M. D., Chairman, Convalescent Care, ADRIAN V. S. LAMBERT, M. D., Chairman Medical Social Service, IDA M. CANNON, R. N., Chairman. White House Conference on Child Health and Protection. The Century Co. New York. 1932. Octavo of 279-xvii pages. Cloth. Price, $2.50.

The Races of Man. Differentiation and Dispersal of Man. By ROBERT BENNETT BEAN, M. D., Professor of Anatomy, University of Virginia. Physical Anthropology. The University Society, Inc., New York. 1932. Octavo of 134-iv pages. Illustrated. The books, which can be obtained from the publishers only, are issued in various bindings and prices vary accordingly.

Skin Diseases and Nutrition. Including the Dematoses of Children. By ERICH URBACH, M. D., Dozent in Dermatology at the University of Vienna, etc. Authorized English Translation by FREDERICK REHM SCHMIDT, A. B., M. D., Chicago, Ill. Attending Dermatologist and Syphilologist, Alexian Brothers Hospital, Grant Hospital and United States Marine Hospital, etc. Vienna. Wilhelm Maudrich. 1932. Octavo of 242 pages. With 55 Illustrations, 8 Diagrams, and 10 Tables. Cloth. Price, $7.00, post free.

Virginia Medical Monthly

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Editorial

The Neutropenic State.*

Practitioners are impressed with the growing significance in changes in the white cell count of the blood. Surprisingly slowly has the meaning of the "low white count" and the variations from normal in differential counts been impressed upon medical thought. Red blood cells and their abnormalities in the blood picture have impressed their importance doubtless because of a number of reasons but probably primarily and chiefly because of the loss of *color*.

Leucocytosis also has occupied a prominent place. An increase of the total whites and alterations from normal of the several differential forms has become a routine and significant laboratory investigation, possessing an important clinical value. No case of appendicitis, pneumonia, or other infection, fails to receive a consideration of the leucocytosis involved.

Now, happily, growing importance is being given the signs and symptoms of conditions associated with decrease or absence of neutrophilic leucocytes in the peripheral blood. Leukopenia has long been noted as tied up with certain disease states, such as typhoid, influenza, osteomyelitis, tuberculosis, certain pneumococcic and streptococcic infections, pernicious anemia, aleukemic leukemia and other states, and certain toxic agents or agencies as benzene, the toxication of arsenicals, mesothorium, X-rays, or the gamma rays of radium.

*Doan—J. A. M. A., July 16, 1932, pages 194-202.

A Leucocyte Catechism.

How are leucocytes divided? They are divided into two groups: (1) Non-granular mononuclear cells, and (2) granular polynuclear cells.

What terms are usually employed in describing these variations and what is the average occurrence in the blood? The non-granular mononuclear cells are termed lymphocytes; there are the small and large variety—the small make up about 23 to 28 per cent of the total leucocytes and the large mononuclear about 2 to 4 per cent; the mononuclear cells originate in the lymphatic tissues of the body.

What about the "polys"? The polynuclear leucocytes are divided into three groups. The groups are determined by whether the granules in the cells stain with a basic stain (basophiles are about 1 per cent); with an acid stain (acidophiles are about 2 to 4 per cent); with a neutral stain (neutrophiles are most numerous and are about 65 to 75 per cent of the total leucocyte count). Besides these, there are the transitional cells.

Where do the polys—the polynuclear cells—originate? They originate in the bone marrow and therefore are called myeloid cells. They develop from cells in the bone marrow (myeloblasts). In due course of development, the various forms appear in the blood to perform their physiologic functions in the body.

What are the functions of these cells? This question cannot be answered in full but it is known that they possess ameboid movement

and are able to ingest foreign particles. Hence, they are commonly called phagocytes. Leucocytes increase rapidly in the occurrence of certain inflammations, injuries or infections and mobilize "at the spot which is the seat of the injury or infection, and remove the foreign organism or necrotic tissue by ingesting and digesting it." Other functions not so universally accepted are accredited to leucocytes.

The normal number of white cells varies from 6,000 to 8,000 per c.m.m. These vary, however, under normal conditions of the body.

Reference: Physiology and Biochemistry in Modern Medicine. 3rd Edition. Macleod.

Granulopenia.

After a cursory review of the recent publications on this topic, the classification proposed by Piersol and Steinfeld* appears as possessing a balanced view of the subject.

I. Primary granulopenia
   (a) Acute (Schultz)
   (b) Chronic or recurrent
II. Secondary granulopenia

This condition was first brought to the attention of medicine by Schultz in 1922. He described this entity as agranulocytosis and cited four cases. Since that time, medical publications have been dealing with this subject. In the literature, there has developed an ambiguous terminology and many different terms have been employed by authors. The most popular caption used for a time was agranulocytosis. Also the name angina agranulocytica was used. Schilling used the term malignant neutropenia. Later, Rosenthal divided agranulocytosis into malignant (fatal) and benign. Dr. Beck† suggests a classification that conveys a wider grouping of cases in this entity—malignant neutropenia. Primary may be fulminating, subacute, recurring or relapsing, and subchronic. Secondary may be fulminating, subacute, recurring or relapsing, and subchronic. Benign neutropenia with primary type may be subacute, recurring or relapsing, subchronic, and cyclic, and in secondary may be subacute, recurring or relapsing, and subchronic.

Clinical Considerations

Since Schultz in 1922 pointed out a rapidly *fatal state*, called by him angina agranulocytica, which was associated with a progressive oral infection of a severe grade, with marked weakness and prostration and with definite low white cell count to the present time, especially the past three years, the recognition of a group of important clinical entities, related to leukopenia, has been more and more frequent in practice and in clinical reports.

It may be reasonably certain that the importance of this type of cases has not received adequate attention.

A hypothesis that explains the mechanism of leukopenia by making the bone marrow the organ of generation and development of polynuclear lymphocytes may also place the clinical symptoms occurring in the mouth either as a cause or as an effect. So we may say that in primary granulopenia, the oral lesions and sepsis are secondary to the granulopenia, previously superinduced, for instance, by an allergy, some endocrine disturbance or some congenital deficiency of the bone marrow. Likewise, B. influenzae or some chemical poison has been thought to exert some depressing effect upon the bone marrow.

In secondary types, one can conceive of an infection attacking the mouth and throat and overwhelming the bone marrow function. There may be also the more or less recurrent or chronic type due to causative factors influencing silently and adversely the bone marrow and in this way stealthily bring about in patients "a low state of resistance" such as would be a factor in a recurring attack.

The Nucleotide Therapy.

A paper by Drs. Jackson, Parker, and Taylor* may serve as a reference in presenting this form of therapy. They report the results of the treatment of sixty-nine case of "agranulocytic angina" and other forms of malignant neutropenia by injections, intravenously and intramuscularly, of pentose Nucleotide K96 (Smith, Kline and French Laboratories). By this Laboratory, under the direction of the Nucleotide Committee of Harvard Medical School, the material was prepared. Of the sixty-nine cases treated, fifty-one completely recovered. Of the sixty-nine adequately treated cases, fifty-four were typical agranulocytic angina.

The plan of administration for this group was intramuscular injection of Nucleotide K96, 10 c.c. twice a day until the white blood count increased; then a continuation of intramuscular injections, 10 c.c. each, once a day

*J. A. M. A., June 20, 1931, page 2151.
†Bulletin of Stuart Circle Hospital, Richmond, Va., August, 1932.

*Studies of Diseases of the Lymphoid and Myeloid Tissues. American Journal of Medical Sciences, September, 1932.

until the white blood cell count reached normal and remained so for at least three consecutive days. A watch was maintained over the patient's white cell count by repeated examinations in order to discover earliest signs of a possible relapse.

In certain of these cases large doses were necessary to bring a response in increased white blood cells; smaller doses produced little or no effect. In the gravest cases or "desperately ill" patients, intravenous injections of 10 c.c. of Nucleotide, diluted with 100 c.c. of warm sterile saline, injected slowly each morning for four days, was practiced. In these patients an intramuscular injection of the usual dose was given in the afternoon until the white cells approached normal for three consecutive days. No improvement, states the authors, should be expected for the first few days. In fact the patient may become apparently worse. This fact is not a reason for discontinuing the treatment. Favorable clinical and hematologic improvement usually appeared on the fifth day and the response at this time was marked. "The mortality is the lowest of any published series of like size."

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Tenth University Clinic.

The regular fall clinic at the University of Virginia Hospital, tenth in its post-graduate series, held on October 13th and 14th, attracted a smaller attendance than usual, a group characterized as constituting in the main the "old guard" which never quits.

The clinics comprised two days of sessions devoted to surgical, obstetrical, pediatric and orthopedic problems, with a Symposium on Headache, an evening program of open discussions and ward rounds both afternoons.

Those registered in attendance were as follows:

Broadway—Dr. C. E. Watson
Charlottesville—Dr. J. C. Coulter
Dr. Anita Lotti
Chatham—Dr. C. D. Bennett
Culpeper—Dr. H. T. Chelf
Dr. D. W. Kelly
Forest—Dr. B. A. Rice
Fredericksburg—Dr. John E. Cole
Dr. Lee Cooke
Dr. J. M. Holloway
Dr. R. J. Payne
Dr. Earl R. Ware
Front Royal—Dr. O. W. Carper
Dr. D. M. Kipps
Ivy Depot—Dr. H. L. Baptist
Louisa—Dr. H. S. Daniel
Dr. H. W. Porter
Lynchburg—Dr. P. B. Echols
Dr. John Hundley, Jr.
Dr. E. G. Scott
Dr. E. L. Sutherland
Madison Mills—Dr. Lee Taliaferro
New Hope—Dr. T. R. Rolston
North Garden—Dr. Hunter Williams
Orange—Dr. Lewis Holladay
Petersburg—Dr. Ruth Mason-Grigg
Richmond—Dr. T. W. Anderson
Dr. H. B. Haag
Dr. R. J. Main
Dr. E. J. Moseley, Jr.
Dr. F. J. Wampler
Dr. Pauline Williams
Scottsville—Dr. Percy Harris
Shenandoah—Dr. J. J. Waff
Stanardsville—Dr. E. D. Davis
Staunton—Dr. Wm. A. Murphy
Dr. M. J. Payne
Dr. C. W. Putney
Dr. Alex F. Robertson, Jr.
Swoope—Dr. W. F. Hartman
Turbeville—Dr. J. A. Owen
Tye River—Dr. J. F. Thaxton
Unionville—Dr. R. M. Shelton
Vinton—Dr. N. M. Robinson
West Point—Dr. M. H. Harris

Prenatal and Postnatal Courses Enroll Eighty-three Physicians.

Through the seventh meeting of the second circuit of Dr. M. E. Lapham's courses in prenatal and postnatal care at Farmville, Lawrenceville, Ettrick, Petersburg and Richmond, eighty-three physicians have enrolled. Fifty-seven visitors have attended the meetings one or more times. Both the enrollment and the total number in attendance exceed the figures for the first circuit when seventy-four enrolled and twenty-nine visitors were listed. The first circuit, however, has a slightly more favorable record in respect to attendance, 76.8 per cent of those enrolled as against 74.7 per cent for the second circuit. Much the best showing has been made in the later groups in respect to the number of patients furnished for clinical demonstrations and the number of visits made by the Field Clinician to physician's offices in out-of-class hours.

The following items with previous reports

give complete information in regard to the second circuit through the seventh meeting:

Richmond—Additional enrollments: Drs. R. D. Bates, E. C. Cobb, J. T. R. Sweeney and H. H. Ware. New visitors: Drs. O. W. Cranz, H. C. Spalding, J. A. Wright and J. M. Gouldin. Total enrollments, 21. Percentage of attendance of those enrolled, 71.4.

Petersburg—Additional enrollments: Drs. P. L. Hill, F. M. Howell and H. G. Stoneham. New visitors: Drs. P. Jacobson, W. B. McIlwaine, Leta J. White and J. D. Osborne. Total enrollments, 24. Percentage of attendance of those enrolled, 69.0.

Ettrick (colored physicians)—Additional enrollment: Dr. Zenobia G. Gilpin. Total enrollments, 7. Percentage of attendance of those enrolled, 79.6.

Farmville—New visitor: Dr. W. R. Warriner. Total enrollments, 21. Percentage of attendance of those enrolled, 80.3.

Lawrenceville—New visitor: Dr. E. R. Turnbull. Total enrollments, 10. Percentage of attendance of those enrolled, 80.0.

Third Circuit Begins This Month.

Through the courtesy of its officers, Dr. George A. Wright, President, and Dr. A. M. Showalter, Secretary, and Dr. J. W. Preston, who as President of the Medical Society of Virginia instituted its educational program in 1928, the Southwestern Virginia Medical Society was given information concerning the program of post-graduate courses in prenatal and postnatal care at its regular meeting on September 21st. By action of the executive committee, the courses were approved for the territory of the Southwestern Society to begin the second week in November.

On October 3rd at the business meeting of the Roanoke Academy of Medicine, the officers, Dr. E. E. Watson, President, Dr. F. A. Farmer, Vice-President, and Dr. C. H. Peterson, Secretary, arranged for a complete discussion of the proposed class in Roanoke. The Academy unanimously voted its approval and appointed as a committee to have charge of details of organization and of conduct of the clinics Dr. George S. Hurt, Chairman, Dr. John O. Boyd, Dr. Alvah Stone, Dr. A. M. Groseclose and Dr. R. M. Wiley.

In addition to Roanoke, the third circuit comprises classes in Galax, Pulaski, Wytheville and Christiansburg. Special meetings of the physicians in each county were held at these four centers on October 10th and 11th. In each case the class was enthusiastically approved and thirty-four of thirty-five physicians present enrolled, the thirty-fifth being prevented by absence from his community on the day of the meeting.

Much attention was devoted to the double problem of completing enrollments without expensive visits on the part of the organizing staff and of providing the patients so essential for effective demonstrations. At each center committees were selected to take charge of these aspects of the courses: For the Galax group, Dr. Joseph Coates was elected chairman of the committee on clinical material and Dr. V. O. Choate chairman of the membership committee. In Wytheville, Dr. J. M. Miller and Dr. C. D. Moore constitute the membership committee and Dr. W. L. Gannaway, chairman, and Dr. C. F. Graham the committee on clinical material. At Pulaski all except two prospective members were enrolled and a committee was instructed to invite each of them. A committee of one, Dr. R. H. Woolling, was also designated to help secure patients. At Christiansburg, Dr. J. G. Davis, Jr., as chairman of the committee on membership, was authorized to select other members, and Dr. W. K. Lloyd, chairman, and Dr. J. L. Early, Dr. C. F. Manges and Dr. R. M. DeHart were appointed as the committee on clinical material.

Because of this interest and the effective preliminary organization, which profits by the difficulties and needs revealed in former classes, the third circuit of courses gives promise of being, if not the largest, certainly one of the most productive of the year.

The Fourth Circuit in Formation.

The fourth circuit of classes in prenatal and postnatal care, assigned by the Joint Committee to the Tidewater section, is tentatively scheduled to begin at the end of January with centers in Norfolk, Portsmouth, Suffolk and Franklin, with the location of the fifth class undecided. In the interest of effective organization, visits were made early in October to the officers of all local and regional societies in the territory, the Second District, the Southside Virginia, Norfolk County, Nansemond County, Southampton County and Princess Anne County.

Approval of the program was voted by the Norfolk County Society in its October business meeting, and a committee under the chairmanship of Dr. C. J. Andrews was appointed by

the President of the Society to take charge of the conduct of the class. Special meetings of other interested groups are to be held later in the fall for the completion of plans.

President Joseph D. Collins, of the Norfolk County Society, looked with favor upon the organization of a class for colored physicians if other arrangements permitted. Dr. G. Hamilton Francis, President of the National Medical Association, who after a visit to the class at Ettrick for colored physicians is enthusiastically stimulating the organization of a similar class for his colleagues in Norfolk, has undertaken to submit the application of at least a minimum enrollment. The application for this class was to be acted upon in the light of the policy adopted by the Joint Committee in respect to classes for colored physicians. As stated in the report below, the Joint Committee decided to arrange groups of Negro doctors whenever conflicts could be avoided and the local groups were favorable.

Reports to Local Societies on the Program of Prenatal and Postnatal Care.

Because the Joint Committee feels an obligation to report upon its work to members of the Medical Society of Virginia who are appriating funds for its support, letters have been addressed to all group societies and most of the local societies that are active in scientific and educational programs offering the services of a speaker to present the aims and methods of courses in prenatal and postnatal care. Members of the Joint Committee and its organizing staff and interested members of the classes themselves are making these reports to the societies. The request for the privilege of such a report is here renewed, inasmuch as the Joint Committee wishes to leave no stone unturned in accounting for the results it has achieved to those who charged it with the responsibility of its educational program.

Joint Committee Meeting.

On Friday, October 14th, six months to the day since it employed a full-time Field Clinician and embarked actively upon its work, the Joint Committee on Prenatal and Postnatal Instruction met to take stock of results and make plans for the future. All members were present: Drs. Lee E. Sutton, Jr., Chairman, and Manfred Call, representing the Medical College of Virginia; Drs. H. S. Daniel, R. A. Moore, I. C. Harrison, and J. Allison Hodges, representing the Medical Society of Virginia; and Drs. J. C. Flippin and L. T. Royster, representing the University of Virginia. Others present were Dr. W. F. Draper, State Health Commissioner, Dr. M. E. Lapham, Field Clinician, Miss Edwards, Mr. George B. Zehmer, Director of University Extension, and the Secretary, Mr. George W. Eutsler.

The Secretary's report of progress, a summary of statements in this and previous issues of the VIRGINIA MEDICAL MONTHLY, was presented in the following table of enrollments and attendance for the eleven classes already organized:

	Enrolled Members	*Average Attendance Including Visitors*	*Per Cent Attendance of Members*
FIRST CIRCUIT:			
Nelson County	8	6.5	81.3
Lynchburg	13	13.4	81.6
Lexington	14	9.6	65.7
Staunton	18	16.6	87.2
Charlottesville	21	15.9	70.5
Total	74*	62.	76.8
EASTERN SHORE:			
(Two weeks' course)	12*	12.2	72.5
SECOND CIRCUIT:			
(Through 7 meetings)			
Richmond	21	25.4	71.4
Petersburg	24	19.9	69.0
Farmville	21	21.5	80.3
Lawrenceville	10	10.4	80.0
Ettrick (for colored physicians)	7	6.8	79.6
Total	83	84.	74.7
GRAND TOTAL			
For eleven classes	169	158.2	75.6

In response to a question, it was determined from the rolls that the membership was exactly divided between local and remote members in the sense that eighty-five resided in the centers and eighty-four lived outside. A superficial examination of the rolls gave the impression that the more distant members made the best attendance record.

A summary of the opinions of the course reported by members of the classes in the first circuit and on the Eastern Shore shows that the lectures were considered "excellent" by thirty-six; "good" by fourteen; no answer, one. The vote on the clinics was: "Excellent," nine; "good," fourteen; "fair," eight, "passable," two; "poor," thirteen; no answer, four. (It should be added that in nearly every case the criticism of the clinics was based upon the inability of the class to furnish clinical material.) Forty-seven members said the course was worth their time and money, two said it was

*Excluding five physicians who enrolled and paid the fee but did not attend.

not (one explaining that he was too deaf, and the other that he lived fifty miles away), two did not answer. Forty-seven were also interested in future similar courses in other branches, against three not interested; the subjects preferred were pediatrics, seventeen, and general medicine, fifteen, with a scattering mention of others—heart, diagnosis, endocrinology and vaccines, chest, arthritis, dermatology, gastro-intestinal, immunization and preventive medicine, genito-urinary, kidney, medical economics, allergy, mental diseases, operative obstetrics, and intravenous and microscopical work.

First steps in the organization of the third circuit of classes in Roanoke, Christiansburg, Pulaski, Wytheville and Galax, and of the fourth circuit around Norfolk, were described as reported above.

The requirement that no class should be begun until it was approved by the local profession was reported as being strictly complied with. Besides visits to societies for endorsements discussions of the work were being arranged for societies not yet scheduled for classes. The Warwick County, Danville-Pittsylvania, Mid-Tidewater, Northern Neck, South Piedmont, and Fredericksburg societies had invited representatives of the Joint Committee to appear before their meetings.

Six future possible circuits where classes should be organized if they are desired and if this opportunity is to be carried to all parts of the State were indicated as Danville and the Southside, Clinch Valley and the far southwest, the Peninsula, the Northern Valley, Fredericksburg and the Northern Neck, and the territory between Orange and Alexandria.

The chief items of the financial report were: annual budget, $12,500; expenses for six months, $5,656.99; receipts from the Commonwealth Fund, $5,000; from the Medical Society of Virginia, $1,250; from enrollment fees at $5 per member, $750.

Dr. Lapham gave a concise and illuminating report of methods, experiences and results in his work of instruction. In the didactic lectures during the first half of each meeting, he had demonstrated tests for the early diagnosis of pregnancy, pelvimetry, the interpretation of pelvic findings and other obstetrical procedures, and he had continually impressed the necessity for careful routine work, precepts to which emphasis was given by some admissions of members that hurried and unscientific technique had been employed. To the question usually raised of the inability of patients to pay for adequate prenatal care, he had attempted to show ways by which such practice could be carried on to the profit and prestige of the physician. Increase of discussions was noted as the courses progressed and classes and instructor became better acquainted. Always information in regard to further reading was given, but a need is shown for access to scientific libraries, perhaps those of the two medical colleges if machinery can be provided. Mimeographed copies of all the lectures, printed prenatal history cards which had met with favor and been put to general use, and a sheet of instructions to women, were distributed to the classes. Clinical demonstrations had been helpful and satisfactory where patients were available, although criticism, for which there is a standing invitation, had emphasized the lack of clinical material. In most cases the groups admitted their laxity in suggesting cases and accepted the responsibility for effectiveness or ineffectiveness in this phase of the work. Personal instructions and consultations, when requested and when not supplanting another consultant, were considered a valuable part of the course. The total number of such consultations at the time of the report was seventy-seven. The number of patients in the clinics was eighty-nine. In addition, there had been ward rounds, repeated diagnostic tests, practice demonstrations by members during the classes and several deliveries and operations.

The Joint Committee voted to approve and spread upon the minutes the reports submitted and went on record unanimously as considering that the results so far achieved amply justify the continuance of this program. It was resolved that, in view of the fact that a considerable saving will be made in the anticipated expenses and that collection of fees will exceed expectations, the sums so obtained, added to the tentative allotment of $5,000 by the Commonwealth Fund for the second year, would be adequate to continue the program, provided the House of Delegates supports it again with the same appropriation of $2,500. The organizational staff was enjoined to reduce expenses as much as possible without disadvantage to the work. The Executive Committee, consisting of the Chairman and Drs.

Harrison and Flippin, was authorized to prepare a report and a proposal for the House of Delegates.

The Committee ruled that in the case of applications for classes on the part of Negro physicians, the groups should be formed whenever there was no conflict and the local societies approved.

Geo. W. Eutsler,
Secretary.

Proceedings of Societies

Alleghany-Bath County Medical Society.

On September 29, 1932, the regular bimonthly meeting of this Society was held at the Recreational Hall, Chesapeake & Ohio Hospital, Clifton Forge, Va., Dr. I. T. Hornbarger, President, of Hot Springs, presiding.

The following scientific program was delivered:

Surgery of Cranial Nerves—Dr. C. C. Coleman, Richmond.
Surgical Treatment of Pulmonary Tuberculosis—Dr. Hugh H. Trout, Roanoke.
New Ideas in Regard to Convulsions—Dr. Beverley R. Tucker, Richmond.
Infant Feeding—Dr. J. B. Stone, Richmond.
Dinner 1:00 P. M.
The Problem of Chronic Arthritis—Dr. Russell L. Haden, Cleveland, Ohio.
Transplantation of Ureters for Exstrophy and Carcinoma of Bladder—Dr. J. M. Emmett, Clifton Forge.
Demonstration of Cases—Dr. G. S. Hartley, Clifton Forge.

Numbered among the invited guests were Dr. J. Frank Dinnen, Cleveland, Ohio, Supervising Surgeon, the Chesapeake & Ohio Railway and Chief Surgeon the Erie Railway, and Dr. W. T. Oppenhimer, Richmond, Va., Chief Surgeon, the Chesapeake & Ohio Railway.

The meeting was well attended by the active members of the Society, as well as by an excellent representation of the profession from the surrounding counties of this section of Virginia and West Virginia numbering about seventy.

Applications for membership were received from Dr. Harry G. Hudnall, Covington, Va., and Dr. Maurice M. Fliess, Clifton Forge, Va.

R. P. Hawkins, Jr., *Secretary.*

James City-New Kent County Medical Society.

A meeting of this society was held on October 6th at Toppings Tourist Camp. There were nine members present. Two new members were received into the society—L. V. Henderson, D. D. S., and Henry E. Davis, M. D. Dr. A. M. Sneed was elected delegate and Dr. J. R. Tucker alternate to the Medical Society of Virginia.

A motion was made and approved that each member be assessed one dollar every two months to take care of incidental expenses of the Society.

There was considerable discussion of the Mother's Bill of Rights, and the Society went on record as approving the amendment to this Bill.

Dr. A. M. Sneed, Toano, is president of this organization, and Dr. J. R. Tucker, Williamsburg, secretary.

The Loudoun County Medical Society,

At its annual meeting held recently, elected the following officers for the ensuing year: President, Dr. H. P. Gibson, Leesburg; vice-presidents, Drs. W. D. Sydnor, Hamilton, and George H. Musgrave, Leesburg; and secretary-treasurer, Dr. W. O. Bailey (re-elected), Leesburg. Drs. W. O. Bailey and M. B. Hiden were also elected at this time as delegate and alternate, respectively, to represent this Society at the Richmond meeting of the State Society.

The Northampton County Medical Society

Held its regular quarterly meeting at the Eastville Inn, Eastville, Va., October 13th, at which time, Dr. F. S. Johns, invited guest from Richmond, presented an interesting paper and several case reports on "Ectopic Pregnancy".

Dr. Griffin W. Holland was elected to succeed himself as a representative from that Society to the Board of Trustees of the Northampton-Accomack Memorial Hospital at Nassawadox, Va., for a period of four years.

W. C. Henderson, *Secretary.*

Patrick-Henry Medical Society.

At a meeting of this Society, October 6th, the following officers were elected for the ensuing year: President, Dr. C. W. Thomas,

Martinsville; vice-president, Dr. W. N. Thompson, Stuart; and secretary-treasurer, Dr. F. B. Teague, Martinsville. Delegates appointed to the Richmond meeting of the State Society are Drs. J. T. Shelburne and D. H. Mason, and alternates Drs. W. C. Akers and E. M. McDaniel.

A motion was made and passed that the secretary of the Society inform the State Board of Health, through Dr. Draper, that the Society protested against making the weekly reports of contagious diseases to the State Board of Health, as is now being required.

F. B. Teague, *Secretary.*

Roanoke Academy of Medicine.

The first Fall meeting of this organization was held on October 3rd, as a dinner meeting and the annual election of officers was held at this time. The following were elected: President, Dr. F. A. Farmer; vice-presidents, Drs. E. C. Ambler and R. L. Mason; and secretary-treasurer, Dr. C. H. Peterson (re-elected). The Executive and Judiciary Committees were re-elected as follows: Executive Committee—Drs. H. B. Stone, I. E. Huff, Paul Davis, E. C. Watson, and Churchill Robertson; Judiciary Committee—Drs. J. W. Preston, H. H. Wescott, E. G. Gill, J. D. Willis, and W. L. Powell.

The next regular meeting will be held on November 7th.

The Rockingham County Medical Society,

At its regular meeting on October 10th, elected Dr. Charles E. Conrad and Dr. F. L. Byers, both of Harrisonburg, as delegate and alternate, respectively, to the annual meeting of the State Society. Dr. T. J. Williams, of the Obstetrical Department of the University of Virginia, gave an interesting talk on the care of obstetrical cases.

Officers for 1932-33 were elected at the September meeting as follows: President, Dr. Noland M. Canter (re-elected); vice-president, Dr. Howard Armstrong; secretary-treasurer, Dr. F. L. Byers. All officers are of Harrisonburg.

The Medical Association of the Valley of Virginia

Held its regular semi-annual meeting in Staunton, September 22nd, with the president, Dr. L. M. Allen, Winchester, presiding. There were sixty-one members present at the luncheon held between the morning and afternoon sessions. Dr. Louis V. Hamman, of Baltimore, the invited guest, gave a talk on "The Diagnosis of Coronary Occlusion." Other papers were given by Drs. F. L. Byers, J. M. Emmett, C. E. Conrad, L. M. Allen, Maurice Fliess, and R. P. Bell.

The following officers were elected for the ensuing year: President, Dr. H. G. Preston, Harrisonburg; vice-presidents, Drs. E. C. Stuart, Winchester, and R. P. Hawkins, Clifton Forge; treasurer, Dr. L. F. Hansbrough (re-elected), Front Royal; and secretary, Dr. Alexander F. Robertson (re-elected), Staunton.

The next meeting of this association will be held at Clifton Forge, the fourth Thursday in May, 1933.

The South Piedmont Medical Society

Plans to hold its regular semi-annual meeting in South Boston, Va., November 22nd. The program promises to be interesting as usual. Dr. J. B. Lacy, Nathalie, is president, and Dr. George A. Stover, South Boston, secretary.

News Notes

On to Richmond!

The Medical Society of Virginia is meeting in Richmond, November 1st, 2nd and 3rd, and many of those planning to attend will be on the way before this issue of the Monthly reaches them. As a last call, however, we urge you to attend, as many matters of interest will be discussed, the scientific and commercial exhibits will be unusually attractive, and there will be helpful clinics on a variety of subjects. Pack up your grip and come at once if you had not already arranged to attend. Bring the ladies of your family with you as the local ladies have arranged entertainment for them and they will want to be present at the Auxiliary meetings to know what the other doctors' wives are doing.

The Southern Medical Meeting.

The twenty-sixth annual meeting of the Southern Medical Association is to be in Birmingham, Ala.,—home of the Association—No-

vember 16th-18th. All doctors who are members of a county society are invited to attend. A large attendance is expected and reservations should be made in advance if possible. In addition to the regular sections, a number of affiliated associations will meet during this time. Birmingham is easily accessible by rail and likewise is the center of a number of good automobile roads. Dr. Lewis J. Moorman, Oklahoma City, Okla, is president, and Mr. C. P. Loranz, secretary manager.

News From University of Virginia, Department of Medicine.

The University opened for the current session on September 15th. The total enrollment in the Department of Medicine is 247 students.

On September 28th Dr. Russell Haden of the Cleveland Clinic spoke before the University of Virginia Medical Society on the subject of The Problem of Chronic Arthritis.

Dr. Robert V. Funsten, Assistant Professor of Orthopedic Surgery at the University of Iowa from 1919 to 1922, and for the past ten years Associate Orthopedic Surgeon at the Harper Hospital and the Children's Hospital of Michigan in Detroit, has been appointed Professor of Orthopedic Surgery in succession to Dr. Allen F. Voshell and assumed his duties on July 1st.

At the meeting of the University of Virginia Medical Society on October 10th, Dr. Vincent Archer read a paper on Actinomycosis, and Dr. C. C. Speidel showed several reels of motion pictures of Living Nerves.

Dr. Vincent Archer attended the meetings of the American Roentgen Ray Society in Detroit on September 27th-30th. He presented a paper on Actinomycosis. He served also as a member of the Committee on Awards in Scientific Exhibits.

The tenth Post-Graduate Clinic, held at the University of Virginia Hospital on October 13th and 14th, was attended by forty-five physicians.

At the meeting of the University of Virginia Medical Society on October 24th the following program was presented: Etiology and Prevention of Heart Disease, Dr. J. E. Wood, Jr.; A Routine Personality Study for Office Use, Dr. D. C. Wilson; An Analysis of the First Year of the Allergy Clinic, Dr. Oscar Swineford, Jr.

Medical College of Virginia News Notes.

An increase of more than seven hundred patients was noted in the outpatient department for the month of September as compared with the same month last year. In September there were 5,150 visits made to the various clinics while for the same month last year there were only 4,381 visits. Of the total visits made in September 51 per cent were male patients and 49 per cent female, and 42 per cent were white, 58 per cent colored. One thousand seventy-eight laboratory tests of various kinds were made in this department.

Dean Robert C. Wilson of the school of Pharmacy of the University of Georgia was a recent visitor to the college.

While in Richmond at the dedication of the Richmond Academy of Medicine, Dr. Edward H. Cary, President of the American Medical Association, made a talk to the junior and senior medical students.

Recent visitors from our alumni were Dr. Joseph T. Peters of the class of 1927, Dr. I. T. Peters of the class of 1918, and Dr. Yates S. Palmer who graduated in 1931.

The pathological museum is now housed in the main reading room of the old library space which was provided in McGuire Hall. This became vacant when the new library was opened the first of September.

At the recent meeting of the American Dental Association at Buffalo Dr. Harry Bear, dean of the school of dentistry, was re-elected secretary of the American Society of Oral Surgons and Exodontists. He was also elected trustee of the Fifth District of the American Dental Association. This district comprises the States of Virginia, North Carolina, South Carolina, Georgia, Alabama, Mississippi and Florida.

Faculty and Staff Meeting.

Dr. I. A. Bigger, Chairman, announces that the regular scientific monthly meeting of the Faculty and Staff of the Medical College of

Virginia was held Thursday, October 20, 1932 at 8:15 P. M. in the auditorium of the Saint Philip Dormitory.

The program was as follows:

1. "A Case Report of Rheumatic Fever (?)." Dr. S. A. Anderson, Jr.
2. "The Morphine-Barbiturates Synergism." Dr. Harvey B. Haag assisted by Mr. W. K. Underwood and Mr. W. A. Porter.
3. "A Review of My Recent Trip to European Clinics." Dr. William B. Porter.

News Notes from the Duke University School of Medicine, School of Nursing and Duke Hospital.

On September 1st, Dr. Willis C. Campbell, Professor of Orthopedics at the University of Tennessee, gave a motion picture clinic on Joint Surgery in the amphitheatre at the Duke Hospital.

On September 26th the autumn quarter of the School of Nursing began with thirty-six students registering, and on October 3rd the autumn quarter of the School of Medicine began with fifty students registered in the first year class, fifty-nine in the second year, thirty-five in the junior and fourteen in the senior class. Several of the senior students are taking their elective work at other medical schools this quarter, for which they will receive credit here.

The regular monthly meeting of the Durham-Orange County Medical Society was held at the Duke Hospital on the evening of October 14th, at which papers were read by Dr. D. T. Smith, Associate Professor of Medicine at the Duke University School of Medicine, and Dr. E. M. Poate, who was recently appointed to the faculty as Assistant Professor of Psychiatry.

On August 15th, Dr. William S. Thayer, of The Johns Hopkins Hospital, gave a clinic on Cyanosis at the Duke Hospital.

The following appointments have been made: Mr. F. Vernon Altvater, Acting Superintendent of the Duke Hospital, and Mr. F. Ross Porter, Assistant Superintendent, in charge of admissions.

Married.

Dr. Kester St. Clair Freeman and Miss Anna Leigh Hawthorne, both of Kenbridge, Va., October 12th.

Dr. Joseph Warren Hundley and Miss Margaret Isabel McCaughan, both of Philadelphia, October 8th. Dr. Hundley was formerly of Richmond, and graduated from the Medical College of Virginia in 1927.

Members of Loudoun County Game and Fish Association.

Dr. John A. Gibson, Leesburg, Va., is a member of the board of governors of this Association and also a member of its legislation committee.

Dr. J. E. Clagett, Hamilton, Va., is a member of the committee on fur-bearing animals.

On Welfare Board.

Dr. T. K. McKee, Saltville, and Dr. R. E. Hughes, North Holston, are two of the directors of the Smyth County (Va.) Welfare Board.

Dr. Carl W. La Fratta,

Of the class of '31, Medical College of Virginia, has located at 413 North 23rd Street, Richmond, Va., for general practice. He interned at St. Vincent's Hospital, Norfolk, Va., and then practiced for a time with Dr. J. D. Hagood, at Clover, Va., before returning to Richmond.

Dr. Clifton R. Titus,

Of the class of '31, Medical College of Virginia, who recently completed an internship at Gallinger Municipal Hospital, Washington, D. C., has located at Lucketts, Va., for the practice of medicine.

Dr. Paige E. Thornhill,

Recently of Watertown, N. Y., has located in Norfolk, Va., with offices in the Wainright Building. He will be engaged in the practice of obstetrics and gynecology.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons,

At its meeting at French Lick, Ind., the middle of September, elected the following officers for the ensuing year: President, Dr. Jennings C. Litzenberg, Minneapolis; vice-presidents, Dr. P. Brooke Bland, Philadelphia, and Dr. Frederick S. Wetherell, Syracuse; secretary, Dr. Magnus A. Tate (re-elected), Cincinnati; assistant secretary, Dr. Arthur M. Mendenhall, Indianapolis; and treasurer, Dr. Lewis F. Smead (re-elected), Toledo.

It was decided to hold the next annual meeting in September, 1933, at Lucerne, Quebec.

The mid-winter clinical meeting will be in St. Louis.

Dr. Jesse McCall,

Of the class of '31, Medical College of Virginia, has recently won honors in surgery in the National Medical Board Examinations. He was one of eleven physicians who were declared honor winners out of a total of 352. Dr. McCall is at present a house physician in the Boston City Hospital.

Dr. Beverley R. Tucker,

Richmond, Va., was elected president of the Virginia Society of the Cincinnati, at its meeting in Richmond, the middle of October.

Dr. Holcombe H. Hurt,

Who recently completed a fellowship in surgery at the Mayo Clinic, Rochester Minn., has returned to Virginia and located in Lynchburg, Va., with offices in the Allied Arts Building. He will be engaged in the practice of surgery. Dr. Hurt is an alumnus of the University of Virginia in the class of '24.

Dr. W. Arthur Porter,

Norfolk, Va., announces the removal of his offices to 501 Wainwright Building, 229 West Bute Street, that city.

Dr. J. T. Green

Announces that he is located at Pennington Gap, Route 2, Va.

Dr. O. Noel Morison,

Class of '28, University of Virginia, following a fifteen months' internship at the New York Neurological Institute, accepted a position on the medical staff of the Essex County Hospital (psychiatric) at Cedar Grove, N. J., and entered upon his duties there on October 15th. His previous training consisted of twenty-one months at the reception service of the Binghamton (N. Y.) State Hospital, a one-year fellowship at the Institute for Juvenile Research, Chicago, in which time training was received in child guidance work, criminology and psychoneuroses at the Institute, Joliet prison and Michael Reese Hospital, and three months on the psychiatric staff of the Institute for Juvenile Research.

Our American Red Cross.

The American Red Cross will hold its annual Roll Call between Armistice Day and Thanksgiving. At that time the American people will be asked to renew their memberships in this, our national relief agency. Moneys received in this way finance the truly monumental humanitarian program of the Greatest Mother, the demands upon whose bounty have never been greater in urgency and degree.

More than 15,000,000 of our citizens have been served by the American Red Cross within the past year through its various activities. At the present moment unemployment relief is being carried on in some 2,200 of its 3,600 chapters. Last spring alone 300,000 packages of garden seed, each weighing four pounds were distributed and 220,000 tons of stock feed. Utilization of local Chapters enabled the needy to receive 40,000,000 bushels of Government wheat and is now making available the 500,000 bales of Government cotton voted by Congress for relief.

Some communities have held their drives but if you have not joined for 1933, do so now. Only 50 cents of your membership fee, except Life and Patron memberships, is used for National Service. The rest stays in your Chapter.

Dr. Morton M. Pinckney,

Having completed an internship at the Massachusetts General Hospital, Boston, has returned to Richmond, Va., and is located at 828 West Franklin Street, where he is associated in practice with the Doctors Blanton. Dr. Pinckney graduated from the University of Virginia in 1930.

Dr. Deryl Hart,

Head of the Department of Surgery at Duke University, Durham, N. C., addressed the Lynchburg (Va.) Academy of Medicine, Inc., on October 3rd, his subject being the Tidal Irrigation Treatment of Empyema.

Dr. James Morley Hitzrot

Has been appointed Professor of Surgery and Attending Surgeon to the New York Polyclinic Medical School and Hospital, New York City.

Dr. and Mrs. Joseph T. N. McCastor

Are at present in Vienna, where Dr. McCastor is taking post-graduate work and Mrs. McCastor is working toward her M. D. degree. Dr. McCastor graduated from the Medical College of Virginia, Richmond, in 1927, and shortly thereafter went to New York City.

The American Society for the Control of Cancer.

At a meeting of this Society on October 8th, the Board of Directors voted that "the *Bulle-*

tin of the Society be made its official organ and that the present relationship between the Society and the *American Journal of Cancer* be discontinued."

American College of Surgeons.

As we go to press, we learn that Dr. William D. Haggard, clinical professor of surgery at Vanderbilt University, Nashville, Tenn., was named president-elect of the American College of Surgeons, meeting in St. Louis. He succeeded Dr. J. Bentley Squier, of New York City, who became president at this meeting.

Parrot Fever Warning Issued.

The U. S. Public Health Service advises all persons to avoid contact with recently shipped or acquired birds of the parrot family, as several cases of psittacosis, or parrot fever, have recently been reported in various parts of the United States.

New Zealand's School Dental Service.

New Zealand has a system of school dental clinics—begun in 1920—which are established on application when the cost of premises and certain maintenance expenses are guaranteed by responsible local organizations. The teeth of all children in the entering classes are examined, and any needed treatment is given if the parents consent. Re-examinations and necessary treatments are given at intervals of six months. At the present time about 60,000 children in 730 schools are being cared for. An important feature of the system is the employment of women nurses who have received a two-year course in dental hygiene in the Wellington training school.

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Hourly Nursing Service.

The Private Duty Nurses' Club, of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

For information, dial 3-1656. (*Adv.*)

For Sale—

Modern office equipment and instruments. Can be seen at 406 West Broad Street, Richmond, Va., or for information write No. 362, care Virginia Medical Monthly, 1200 East Clay Street, Richmond. Reason for selling—leaving State.

Obituary Record

Dr. Alfred Leftwich Gray.

With the passing of Alfred Gray the profession of the city, state and nation has lost one of its strong men. For as president of the Richmond Academy of Medicine, of the Medical Society of Virginia, and the American Roentgen Ray Society, he has led and served all three.

Born in Fluvanna County, Va., in 1873, he received his academic training and later his medical degree at the University of Virginia in 1897. Dr. Gray became associated with the University College of Medicine in 1899 and served that institution as instructor in Anatomy and Orthopedic Surgery, and later as Professor of Physiology until that school was merged with the Medical College of Virginia in 1913. He held the same chair of Physiology in the amalgamated school until 1916. That year he was made Professor of Roentgenology and Dean of the School of Medicine, which latter position he held until 1920. To enumerate all of his professional affiliations and activities would be a work of supererogation.

There is probably no man today living in this State who has contributed more liberally of his time, energy and ability to medical education and to medical organization than has Dr. Gray. In his long service as Dean of the Medical College of Virginia, his judicial temperament and spirit of fair play won the respect, admiration and affection of all who came

in contact with him. Though he never hesitated or equivocated but boldly took his stand in any controversy, he had the happy faculty of never offending his antagonists. When Alfred Gray studied medicine, the bench lost a man who would have graced its councils. If there was one outstanding characteristic of this man other than his fairness and human sympathy, it was his thoroughness. He finished what he started! It was this infinite capacity to take pains, to complete every task in minutest detail, that made him one of the foremost figures in his chosen specialty of Roentgenology.

All this of Alfred Gray the physician, who gave unstintingly of himself to his profession, and whose profession rewarded him unstintingly in return. But what of Al Gray the man, Monk Gray as his intimates called him! Here he will be missed as keenly, as poignantly, as in his profession. His gentleness, his kindliness, his blessed whimsical sense of humor, will always remain as sad sweet memories. He has left behind him a beautiful legacy: the record of a full life spent in good work well done, the memory of a devoted husband and father, a fine upstanding gentleman deeply beloved by all who came in contact with him.

W. L. Peple

Dr. Gray died on the night of October 13th, after an illness of a year and a half. He is survived by his wife, formerly Miss Alice Lear Clark, and three sons.

Dr. Thomas Marshall Taylor,

For the past fifteen years resident surgeon at State Farm, Va., died at Blue Ridge Sanatorium, October 18th, after having been in bad health for some time. He was fifty-five years of age and graduated from the former University College of Medicine, Richmond, in 1898. After his graduation, Dr. Taylor entered the quarantine service at Newport News, and then engaged in general practice in Fluvanna and Louisa Counties. Dr. Taylor was surgeon for the Chesapeake & Ohio Railway for some years. His wife and two children survive him.

Resolutions on the Death of Mark Wallace Peyser, M. D.

Death has removed from our midst and gathered to his fathers

Mark Wallace Peyser, M. D., aged 62 years.

Born in Washington, D. C., July 8, 1870, he passed most of his life in Virginia. He graduated from the University of Virginia in 1890, at the age of twenty, and the following year served his internship at the old Retreat for the Sick Hospital, Richmond, Va. His death occurred in Richmond on July 29, 1932.

His relationship to the Richmond Academy of Medicine, and through this organization, to the medical profession of the city and state, was unique; we could hardly think of the one without visioning the other.

In the routine administration, as Secretary of this Academy for nine and-thirty years, in periods of calm and times of stress, Dr. Peyser always presented the same unchanging front; courteous, affable, considerate, just, always dignified, he inspired confidence, esteem and affection.

Meticulous in his association with his confreres, he daily exemplified the highest principles of our profession, with offence to none and satisfaction to all.

Dr. Peyser was a student—eager to keep abreast of the always advancing medical sciences—selective in the utilization of his knowledge, with an unusual cultural background

He was a humorist and a wit, happy in his friendships and loyal to his friends. With fortitude and unshaken faith he passed his latter years of disability and pain.

The Academy honors itself in honoring his memory, and placing on its records its testimonial of his worthiness as a physician and officer of this Academy, his value as a medical teacher and writer, his devotion as a husband, son and brother, and his virtues as a man of honor and unaffected simplicity. His memory will always be fragrant to those who knew him and worked with him.

"Green be the turf above thee,
Friend of my better days;
None knew thee but to love thee,
Nor named thee but to praise."

Manfred Call,
Joseph Bear,
Committee.

Dr. James Murray Ellzey,

Philadelphia, Pa., died October 21st, after a short illness, at the age of sixty. He was a native of Virginia and graduated in medicine from the Medical College of Virginia in 1896. He is one of the founders of the Chestnut Hill Hospital of Philadelphia and a consulting surgeon in that institution.

Dr. Harry Lee Beard,

Lewisburg, W. Va., died August 17th. He was sixty-two years of age and a graduate of the University of Virginia, Department of Medicine, in 1893.

Professor William August Puckner,

Secretary of the Council on Pharmacy and Chemistry of the American Medical Association, died October 1st, aged 68 years. Professor Puckner was well known to the profession of this country. He was chosen secretary of the Council on Pharmacy and Chemistry when it was established in 1906 and had served continuously since that time.

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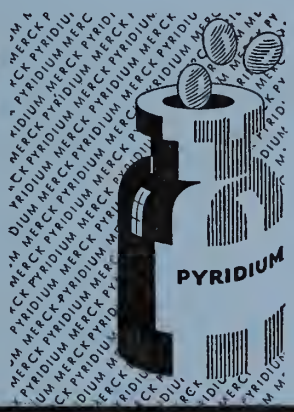

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Vol. 59, No. 9.
WHOLE No. 966.

RICHMOND, VA., DECEMBER, 1932

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A HISTORICAL SKETCH OF THE MEDICAL SOCIETY OF VIRGINIA.*

ISAAC CARRINGTON HARRISON, M. D., Danville, Va.

Members of the Medical Society of Virginia; Ladies and Gentlemen:

Let me say, first, that as a Society we appreciate to the fullest the privilege of meeting here in Richmond. Your city is ours and, as is the case with every loyal Virginian and Southerner, we feel pride in and affection for this beautiful and historic place. As most of you doubtless know, it is customary for the Medical Society of Virginia to meet each year in some town or city of the State; to attend medical and surgical clinics, to listen to the reading and discussion of scientific papers, to hear reports of the various committees on many phases of the activities of the Society; elect officers for the ensuing year, and to make plans for another year's work. These meetings also give us the opportunity of mingling together with our friends from all sections of the State, which in itself is a very delightful experience. I am of the opinion that those in our profession are closer and more intimate in their friendships than is the case in any of the other callings in life. This is true, however strong the popular belief may be to the contrary. In recent years we have curtailed these meetings; and have practically eliminated the entertainment features that formerly consumed quite a good deal of the time now given over to the scientific part of the program.

It is customary for the president on this occasion to read a paper or make an address on some scientific medical question. I shall take advantage of my position and, following my own inclination, relieve you of listening to a scientific paper from me. The gentlemen who speak later will make up for this departure from our usual custom. In looking back through the minutes of transactions of former meetings, I have noticed that several times the presiding officers have, in their addresses, made special mention of the early history of the Society. Dr. Gildersleeve, of Tazewell, in 1901 made such an address, and in 1915 Dr. John N. Upshur, of this city, read a highly interesting paper with short character sketches of a number of prominent physicians who were among the charter members of this Society. Many of the older members doubtless remember these addresses.

As we are meeting in Richmond at this time, it occurred to me that it might be interesting to relate to you some facts about the history of the Medical Society of Virginia connected with this city and its people. Richmond has long been considered the largest and most important medical center in the State, if not in the South. The Medical Society of Virginia was organized by seventeen physicians of Richmond and Manchester, December 15, 1820. Dr. James McClurg, of Richmond, was the first president. The Society was incorporated January 21, 1824. Among the incorporators appear the names of Dr. William Foushee, the first mayor of Richmond. He also became president of the Medical Society of Virginia in 1822. Other incorporators were George Watson, Dr. James Henderson, James Blair, and John Adams, mayor of Richmond. Dr. James McClurg, the first president of the Society, had quite an interesting history. He was a student at William and Mary College in 1762 when Thomas Jefferson was there, received his medical education and training in Scotland, Paris, and England; settled in Williamsburg, and was appointed professor of medicine and anatomy in William and Mary College when that chair was first created in 1779. He was three times mayor of the City of Richmond, thereby establishing a precedent for your present mayor. For some unknown reason the Society did not continue but passed almost immediately, as Dr. Blanton puts it, into a state of suspended animation. It was revived again in 1841, when Dr. R. W. Haxall was made president of the rejuvenated Medical Society of Virginia. About 1849 agitation for

*Address of President of the Medical Society of Virginia before its sixty-third annual session at Richmond, November 1-3, 1932.

statewide representation began, due to the fact that, though there were members of the Society living outside of Richmond, the State in general was jealous of the monopoly which the doctors of Richmond apparently held. On April 20, 1858, the first annual meeting of the Medical Society of Virginia operating on a statewide plan was held. In 1859 the Society suspended because of the Civil War. I am indebted to Dr. W. B. Blanton for the above information.

It seems peculiarly appropriate that the Society should meet in Richmond tonight, for this is the 62nd anniversary of the reorganization of this Society, which took place November 2, 1870. I do not recall that there was any celebration of our 50th or "Golden Anniversary"; but it is not too late to pay some tribute to those who made possible our gathering here tonight. Reading over the list of names of charter members, you will find quite a good number who attained eminence in their profession and also in civic life. These are they who laid the foundation for the advancements and accomplishments of this Society, as its members have met and carried on from year to year for more than half a century. "Those of us who have passed the meridian of life and reached the point where the shadows begin to lengthen may for a while turn our faces from the setting sun and look back over the long course of strenuous professional effort whose highest and best reward is the consciousness that we have striven to be honest and faithful in the discharge of duty to our fellowmen."

The reorganization of our Society is justly accredited to the Lynchburg Medical Association. At a meeting in Lynchburg June 7, 1870, Drs. Benjamin Blackford, Landon B. Edwards, Henry Latham, R. S. Payne and W. O. Owen were appointed a committee to address letters to the medical societies of Richmond and Abingdon and to all regular qualified physicians in this State. On November 2, 1870, in response to these letters, ninety-two physicians assembled in Richmond and reorganized the Medical Society of Virginia. Dr. James B. McCaw was chairman of the convention, and Dr. Landon B. Edwards, who was secretary of the convention, was first secretary of the reorganized Medical Society of Virginia; and was re-elected each year, except in 1883, from 1870 to 1911. Dr. Robert Cabell was secretary in 1883. Dr. R. S. Payne, of Lynchburg, was the first president of the reorganized society.

In 1874, Dr. Edwards founded the Virginia Medical Monthly and continued to edit it until his death. The Medical Monthly, under Dr. Edwards' management, proved to be very valuable to the Society. It was at all times an open forum for discussion by members of the Society and for the publication of scientific articles and carried records of the transactions of the Society from year to year. I am sure you will agree with me that we owe Dr. Edwards a debt of gratitude and appreciation for his long and faithful service. His daughter, Miss Agnes V. Edwards, has been our efficient secretary and treasurer since 1924. The Medical Monthly became the property of the Medical Society of Virginia in November, 1919.

Of the ninety charter members of the Medical Society of Virginia, none of whom are now living, thirty-seven were from the City of Richmond. Included in this list are some of the most distinguished and well-known physicians of this State.

Since the reorganization of the Society in 1870, there have been sixty-two presidents. Of these, fourteen have been from Richmond, and the Society has had its annual meeting thirteen times in this city. Of the sixty-two presidents fifteen are living. Five of these are from Richmond, namely, Drs. J. A. White, Stuart McGuire, J. S. Horsley, W. F. Drewry and J. Allison Hodges. The others from Richmond who are dead are as follows: F. D. Cunningham, L. S. Joynes, Hunter McGuire, W. W. Parker, Geo. Ben Johnston, Jacob Michaux, J. N. Upshur, Hugh M. Taylor, Ennion G. Williams and A. L. Gray. These men are well remembered in Richmond, and all contributed in a large measure to the success of the State Society. Many of them were well-known teachers in the Medical College of Virginia and the University College of Medicine. All of these men were leaders and were prominent and active both in the civic and professional life of the city and State.

I wish to make special mention of my friend and college-mate, Ennion G. Williams, a lifetime resident of your city, who was State Health Commissioner from 1908 until his death in 1930. He reorganized the State Health Department and brought it up to date. Dr. Williams' work in preventive medicine, sanitation, tuberculosis, elimination of typhoid, hook-

worm and infectious diseases, and his campaign for better health in school children are all too well known to require a detailed statement in this paper. There have been few men in office in this or any other State who were more faithful or more efficient. Dr. Williams' life was spent in Richmond, where his parents were prominent and well known. He was educated at the University of Virginia, and after his graduation in medicine had prepared himself to specialize in X-ray work. Upon being urged to accept the position of Health Commissioner, he went abroad and studied in Europe before entering upon his duties. He very soon became impressed with the special needs of the country districts and small towns; became interested particularly in sanitation, soil pollution, hookworm, typhoid fever. It was due to his efforts that the Rockefeller interests contributed to the campaign of sanitation in this State beginning about 1912. The fight was continued to include vigorous efforts for the prevention and elimination of diphtheria, scarlet fever, smallpox, etc. In this campaign of sanitation and preventive medicine the U. S. Public Health Service did notable work in cooperation with Dr. Williams. Dr. Williams found the tuberculosis situation in this State far from satisfactory; the need was outstanding for more and larger sanatoria. With the earnest assistance and cooperation of Captain Baker, of Hallsboro, the Legislature was induced to increase the appropriation for this work, resulting in the increased capacity of State sanatoria. Later Miss Agnes Randolph was employed to devote her whole time in educating the public, by arranging diagnostic clinics for the detection of tuberculosis in the early stages in adults and children. This work has broadened out and today there is a continuous campaign throughout the State against this disease. Time does not permit for giving due credit to Dr. Williams' assistants and coworkers. Dr. Roy K. Flannagan, Assistant Health Commissioner, who is still holding that position, accomplished invaluable work as Dr. Williams' assistant in practically every phase of health work. Dr. W. A. Plecker, of the Bureau of Vital Statistics, is considered one of the most efficient vital statisticians in the country.

Dr. Gildersleeve, in his president's address in 1901, made this statement: "Beyond question free scientific investigations in the 19th century have accomplished more than in all the tide of time." * * * "Can it be supposed that the present century will ever approximate the past in its contribution to the progress of the race?" You may answer that question for yourself after looking back over the discoveries, advancements and progress made in medicine and surgery during the last thirty years. While much has been learned and accomplished through individual study and investigation, it is undoubtedly true that much has been done as a result of organization and cooperation.

The State Board of Health was established in 1872. In 1884 the Legislature of Virginia passed the Medical Practice Act creating the Virginia State Board of Medical Examiners. As originally formed, it was composed of two members at large and three from each congressional district, or thirty-two in all. This number was later reduced to one member from each congressional district of regular physicians, one homeopath and one osteopath, which is the composition of the Board today. The first president of the Examining Board was Dr. W. C. Dabney, of the University of Virginia, Professor of Medicine, a distinguished teacher and practitioner. The Medical Practice Act, after a number of changes, is today considered very satisfactory and compares favorably with that of other states. The licentiates of our Board enjoy reciprocity with practically all states and with the National Board.

The establishment of these two bodies was brought about by the earnest efforts of the members of this Society. To them is due credit in a large measure for the passage of all bills favorable to other medical legislation, which has made possible the improvement in our medical schools—in equipment, in raising the educational standards, and in other ways too numerous to mention in detail.

The fight for establishing an Epileptic Colony was lost for years in the Legislature. However, it was finally won in 1911 and the institution placed near Lynchburg. It has proven one of the most important and necessary institutions in the State.

The State license tax on physicians was removed in 1914. Dr. Geo. Stover, of South Boston, president of this Society in 1917, was active in the fight for this measure in the State Legislature.

In 1882 Local Boards of Health were empowered by an act of the Legislature to enforce, at their discretion, the vaccination of

children in the public schools of the State, and to segregate those suffering from certain contagious diseases. There have been various amendments to this act. In 1928 the act was further amended and makes the vaccination of school children compulsory. In 1924 an act was passed by the General Assembly to provide for the sexual sterilization of inmates of State institutions in certain cases. This applies to patients afflicted with certain forms of insanity, idiocy, imbecility, feeble-mindedness or epilepsy. The enactment of this measure was considered a very important move, and Virginia is to be congratulated in having taken this forward step. This act adopted by the Legislature of Virginia was the first of its kind to be upheld by the Supreme Court of the United States. Other states had similar statutes before Virginia, but she enjoys the distinction of having been first to secure the stamp of approval of our highest court.

A bill having for its purpose the prevention of the marriage of epileptics and the feeble-minded has recently been introduced in our Legislature, but was not enacted into law. It is hard to realize that any thoughtful and informed person could oppose such a bill. As we grow wiser and more enlightened such a measure will surely be adopted.

The Department of Clinical Education of the Medical Society of Virginia was established three years ago. Dr. J. W. Preston, former president, deserves the credit and honor of having first suggested the establishment of this work in the State. The purpose and aim of the Department, under the leadership of the President-elect of the Society, is to provide speakers and clinicians at the meetings of component societies in various sections of the State with the assistance and cooperation of the Medical College of Virginia and the Medical Department of the University of Virginia. The work has progressed satisfactorily, and furnishes rare opportunity for keeping the physicians of the State up to date in medicine and surgery. Through the efforts of this department, with the cooperation of the House of Delegates of the Society, the officers of the Commonwealth Fund of New York made a contribution to establish in this State a special campaign in Prenatal and Postnatal work. The State Society also contributed to this work. Dr. M. E. Lapham, of Philadelphia, is in charge of the work as clinician, and is meeting with success and encouragement in this most important undertaking. Dr. L. E. Sutton, Jr., dean of the Medical College of Virginia, is chairman of the committee, and Dr. J. C. Flippin, dean of the University of Virginia Department of Medicine, is also a member of the committee.

During the past fall and winter the State Department of Health, with the cooperation and approval of the Council of the Medical Society of Virginia, conducted a statewide campaign for the immunization against diphtheria of all children between the ages of five and fifteen. This proved very satisfactory under the direction of our wise and efficient State Health Commissioner, Dr. Warren F. Draper.

Our Society, while intensely interested in the welfare and progress of its members, has not been unmindful of our obligations to those Virginians who have done notable work for humanity in medicine and surgery in the past. In 1927, Belroi, the birthplace of Walter Reed, in Gloucester County, Virginia, was restored, the place purchased, and it will be a permanent memorial to the discoverer of the cause of yellow fever. Dr. E. C. S. Taliaferro, a former president of this Society, was for a number of years chairman of the committee who had charge of this undertaking. Appropriate memorials have also been made in honor of Dr. Peter Mettauer, of Prince Edward County, and Dr. Ephraim McDowell, both of whom did notable work in medicine and surgery early in the 19th century. Dr. J. W. Preston, while president of the Society in 1926-27, realizing the need for a history of Virginia medicine, used his influence in having appointed a historical committee. This committee has been continued on up to the present time. It is composed of Dr. Wyndham B. Blanton, chairman, Dr. Beverley R. Tucker, and Dr. Frederick Rinker. As a result of their work, aided by modest appropriations from the Society, there have been published two volumes: Medicine in Virginia in the 17th Century, and Medicine in Virginia in the 18th Century, by Wyndham B. Blanton. A third volume is soon to be finished—Medicine in Virginia in the 19th Century. These books represent a tremendous amount of work, are intensely interesting, and should be in every doctor's library.

This very sketchy and imperfect effort to emphasize some of the more important accomplishments of the Society brought about by the cooperation of its members would be

incomplete without making special mention of the Bureau of Mental Hygiene under the Department of Public Welfare. I am indebted to my friend, Dr. W. F. Drewry, Director of the Bureau of Mental Hygiene, for a brief statement in reference to this important work. As many of you know, Dr. Drewry, a former president of this Society and for many years superintendent of the Central State Hospital, at Petersburg, is now devoting his whole time to the important subject of Mental Hygiene in this State. Making use of his notes I shall present briefly something in reference to the origin, growth and present status of Mental Hygiene in Virginia.

Custodial care of legally committed "insane" persons constituted, so to speak, the embryonic stage of Mental Hygiene.

Beyond the medical staffs of lunatic asylums of earlier days psychiatry had scant recognition. As a branch of scientific medicine psychiatry made little advance until about the turn of this century when the advent of mental hygiene stimulated interest in the care and treatment of the mentally sick.

The scant teaching that psychiatry received in our medical schools retarded for sometime the growth of this branch of medicine; but the aroused interest of the general medical profession is giving renewed impetus to the study of this subject today.

The accumulating numbers of persons affected with mental diseases and allied abnormal conditions and their consequences—delinquency, crime and social and economic failures—have given rise to the mental hygiene movement in its broadening aspects.

The extra-mural phase of mental hygiene is prevention and early correction of mental disorders and improper behavior, beginning in childhood, and the development of sound mental health and wholesome personality. It is along these lines that our activities are being directed in Virginia.

Following several years of preparation, the situation finally crystallized in the formal organization of the Bureau of Mental Hygiene—a division of the State Department of Public Welfare. Special efforts are being made to foster increased education in mental diseases and mental health and the development of child guidance clinics and psychiatric clinics for young persons and adults. The profession is being urged to take more interest in this important subject, and their hearty cooperation is being sought. Numerous papers have been read before our Society by prominent psychiatrists and a committee added whose duty it is to bring about further education of physicians and laymen in the principles and application of mental hygiene.

At present the central State Mental Hygiene Clinic at Richmond is the chief clinic center of the Bureau. During the past year nearly eight hundred cases were studied here, mostly youths and children. There are also the Richmond Memorial Clinic and the Mental Hygiene Clinic, under the auspices of the Department of Medicine of the University of Virginia, and the Mental and Nervous Out-Clinic in connection with the Medical College of Virginia, and Psychiatric Clinics in connection with the State Hospital service. All of these are of material service in the field of mental hygiene.

Hygiene of the mind is a subject that should continue to have the active attention of this Society; and the public in general should be informed continuously as to the principles and practices.

In closing, I wish to congratulate this Society because we have at last secured handsome and commodious quarters for the home office in the new building of the Richmond Academy of Medicine. The Society can thank Dr. Stuart McGuire for having made this arrangement possible. As chairman of the Library Committee he has had this in mind for several years.

We should be very happy tonight to know that this Society of ours has existed so long. There have been periods of back-sliding, so to speak, but always a return to the same old organization. For sixty-two years there has not been a single intermission or break in the succession. Each year the State Society has met, except in 1918, when, because of the World War, there was no meeting. As the years have passed the membership has gradually increased, the organization has grown stronger and more compact. We are proud of our history, proud of the fact that though times have changed, this is still a society for the general practitioner in city and country, in town and hamlet. While specialists may, and doubtless will, have their own organizations to discuss and study phases of their own work, this will continue a society in which the general policies, as in the past, will be determined by the every-day general practitioner.

The innovations introduced in the last few

years should incite us to more enthusiastic and hearty cooperation. Let us not relax our efforts or become lukewarm in our allegiance. Let us stand together in harmonious union, knowing no distinction between rural and city physicians or between specialists and general practitioners.

THE ROLE OF ALLERGIC DISEASE IN OTOLARYNGOLOGY.*

GEORGE G. HANKINS, M. D., Newport News, Va.

Much has been written in the last decade concerning a certain nasal condition termed vasomotor rhinitis or hyperesthetic rhinitis which is a nasal manifestation of an allergic state.

First. I wish briefly to define allergy, as a state of human hypersensitiveness to certain allergens, namely:

1. Inhalants: pollens, animal emanations, vegetable powders, dust, drugs, etc.
2. Foods: wheat, cereals, milk, eggs, raw fruits, uncooked vegetables.
3. Bacteria.

Inhalants are the most common allergens, but allergic reactions may be caused by ingested foods, or absorption of allergens by other means. With the allergic state the nasal mucous membrane manifests a "lowered threshold of irritability," and the effect of thermal or chemical contact, such as exposure to hot or cold air, or the inhalation of dust, may cause a reaction.

The nasal reactions occurring in allergy are manifested by three cardinal symptoms: sneezing, nasal obstruction and mucous discharge, coming on as sudden paroxysms. The attacks of sneezing vary from five to fifty in number, and have been fittingly described as "machine gun sneezing," after which the patient has nasal obstruction and nasal discharge. The acute paroxysms may occur in cycles of a few hours or a few days. The subsequent nasal obstruction may be accompanied by the loss of smell and frontal headache, due to edema of the olfactory fissure and frontal ostia.

The discharge from the nose may vary from a thin watery discharge to a thick tenacious mucus. The patient is apt to think he has recurrent colds lasting from a few hours to a few days.

In contrast, an acute purulent rhinitis usually lasts from seven to fourteen days and, although the symptoms are quite similar to an allergic reaction, the secretions are first watery, then mucopus and finally mucoid in character. It is entirely possible for an acute purulent rhinitis to be superimposed upon an allergic rhinitis and, if such happens, the allergic reactions may disappear for several weeks, giving the patient a period of rest.

Rhinologic Examination

The examination of the allergic nose reveals bilateral changes which are characteristic. In early cases the mucous membrane in both sides of the nose shows a pinkish gray discoloration, and appears swollen and boggy, causing marked obstruction to nasal breathing. In allergic cases of long duration—over a period of several years—more marked changes are present in the mucous membrane. The color is almost pure gray and marked hyperplasia has taken place in the ethmoid region and along the lower margin of the middle turbinate. As this hyperplasia increases, polypi may make their appearance in these areas. Any of the sinuses may become involved with this hyperplasia and edema, but the anterior ethmoids and maxillary sinuses are the ones most commonly involved.

It is conceded by many able rhinologists that sinusitis is often a result of allergic reactions. The allergic hyperplasia causes destruction of the normal cilia, allows the accumulation of the nasal secretions which gravitates to the sinuses, and thereby results in a secondary purulent rhinitis or sinusitis. In fact, any nasal obstruction which inhibits free ventilation and drainage predisposes to sinusitis.

Eosinophils are found in abundance in the nasal secretion in 72 per cent of allergic individuals as contrasted with 9 per cent of non-allergic cases.

Histopathologic changes in the nose and sinuses in allergy may be summarized in the following characteristic features: thickening polypoid degeneration and hyperplasia in the epithelium; eosinophils, edema, round cell infiltration, connective tissue proliferation in the tunica propria or submucosa; dilatation of blood vessels; general prolapse of mucous membrane of nose and sinuses.

A comparison by recent investigators of these histopathological changes in the nose and sinuses to those occurring in the bronchi in bronchial asthma, shows a striking similarity.

Acute or chronic purulent sinusitis may accompany or follow allergic histopathologic changes, and is differentiated by the purulent

*Read before the Virginia Society of Ophthalmology and Otolaryngology at its meeting on May 14, 1932, at Virginia Beach, Va.

discharge, predominance of polymorphonuclear leucocytes and the diminished number of eosinophils.

Hyperplastic sinusitis, which is usually due to streptococcic infection and in which we may never demonstrate free pus, causes edema and marked structural changes and exists in a subacute or chronic form; it cannot be differentiated from allergic changes until that factor has been excluded.

In regard to bacteria being an etiologic factor in allergy, the allergists are about equally divided in their opinions. No one has as yet demonstrated conclusively whether they are a cause or a result of allergy. Vaughan speaks of a "balanced allergic state" which, when lowered by acute infection, may result in some clinical manifestation of allergy when the patient comes in contact with some protein to which he is sensitive.

Diagnosis

The diagnosis of nasal allergy is based upon a thorough investigation of the patient from an allergic viewpoint. The nasal symptoms and pathological changes in the nose and sinuses should be studied. Study the patient's family history, environment and diet. Sensitization tests should be properly performed. History of paroxysms of sneezing, nasal obstruction and nasal discharge are strikingly characteristic. Examination of the nose reveals edema and hyperplasia of the mucous membrane, thin or thick mucoid discharge, nasal polypi and the finding of eosinophils in the nasal secretions.

In differentiating primary suppurative conditions with edema and polypi from primary allergic cases with secondary infection, it must be remembered that allergic pathology is almost always bilateral and primary suppuration is usually unilateral, but may be bilateral. Hyperplasia and polypi are confined to the ostia of the suppurating sinus. There is an absence of the generalized discoloration seen in allergy. X-ray and transillumination help in determining the condition of the sinuses.

Treatment

The therapy of nasal allergy may be divided into the treatment of the allergy and the treatment of the nose and sinuses.

The treatment of the allergy is confined to the use of such drugs as epinephrine, ephedrin and atropine. Prophylaxis is the most important phase of treatment. The source of the allergens must be determined and avoidance treatment instituted. Where this cannot be done, desensitization as used in hay fever may be employed. Shock therapy with non-specific proteins, such as tuberculin, peptones and vaccines, may give temporary relief.

Operative treatment of the nose and sinuses should not be instituted during the acute attack, such as occurs in hay fever and asthma.

Operations in the nose for the removal of septal spurs, submucous resection, and cauterization of the turbinates may be instituted to restore free breathing and ventilation. The removal of all polypi is done for the same reason. Skillern advocated removal of the middle turbinate and the application of silver tampons in hyperplastic cases, but many eminent authorities discourage any destruction of the middle turbinate, even when a complete exenteration of the ethmoids is performed. Radium is strongly advocated by some authorities, to reduce the hyperplasia and remove the polypi.

Summary

1. Vasomotor reactions occurring in hay fever, hyperesthetic rhinitis, and asthma are manifestations of human hypersensitiveness.
2. Nasal allergy causes certain gross changes in the nasal mucous membrane and sinuses that should be recognized.
3. Eosinophils in nasal secretion are indicative of nasal allergy.
4. Nasal examinations should be made in every case of suspected allergy.
5. Every effort should be made to differentiate nasal allergy from suppurative sinusitis.
6. Conservative surgery, if any, should be the aim in every case of nasal allergy.

Discussion

Dr. Edward L. Alexander, Newport News: That bacterial allergy is still a mooted subject is evidenced by the vast amount of accumulated and accumulating literature. If one surveys the reports that have appeared, one is impressed with the great difference of opinion that exists among those that have applied intensive thought and study to the work. There are perhaps many reasons for this apparent diversity of opinion. While much has been learned concerning the immunological behavior of bacteria since the days of Pasteur and Koch, there still remains much unexplained phenomena associated with these bodies. There are many varied biological circumstances under which they exist. A great deal of accumulated information concerning bacteria has come from animal experimentation and attempts have been made to explain certain conditions caused by them in the human, in the light of animal reactions. This, of course, is always open to question. However, it cannot be said that many helpful observations on the biological activity of organisms in the lower animals have been of help in elucidating immunological uncertainties. The study of bacterial

allergy as it occurs in the human is relatively new. The last decade represents most of the important work that has been done. In 1914, Gay started his work on typhoid vaccine, and found that those patients who had recovered from the disease showed positive skin reactions to the substance known as typhoidin. He found also that these same skin reactions were obtainable following the administration of typhoid vaccine.

In 1915, Kolmer began his work with skin tests in infectious diseases such as syphilis, canine distemper, diphtheria and glanders. However, he soon discovered that there was little or no analogy between the severity of the local reaction and the immunity that the individual had; i. e., the skin test was not an index. Later, Walker and Adkinson began to study the relation between bacteria and asthma. Interestingly enough they found much discrepancy between the skin reaction to tests of bacterial extracts and the circulating antibodies; also that the amount of clinical improvement obtained from the administration of the vaccines bore no relation to the total antibody content of the blood. Thus, the information that we have at present would indicate that skin response to bacterial extracts is no exact index of the amount of immunology that the individual has. However, it is known that bacterial allergy does produce skin manifestations. This is believed to be the state of affairs in some of the exanthematous diseases, chief among which is scarlet fever. This disease is known to be caused by streptococci of a particular strain and its invasion into the human body after a period of time produces certain skin manifestations in the form of a rash. This rash can be caused to disappear oftentimes by the use of anti-scarlatinal antitoxin. There are many other diseases which are believed to be the result of bacterial sensitization, most important among which is arthritis.

Now we might ask ourselves just what is the virtue of vaccine therapy after all? To quote from Dr. Francis M. Rackemann, "Finally, it must not be forgotten that vaccines can produce circulating antibodies (immunity) in animals and also in man. The process is a specific one, but the specific immunizing effect can also be produced by non-specific means." Dr. Rackemann used, as his illustration, rabbits that had been immunized to egg white until their sera showed a high titer of precipitins, then several months were allowed to elapse and the egg white titer had fallen to almost zero Then an injection of typhoid vaccine was given, the egg white precipitins appeared again and reached a very high titer. Thus he says that "Many methods of treatment that are non-specific may in time appear to be specific."

My own feeling about the whole subject of vaccine therapy in allergy is that, by virtue of some factor, whether it be specific or non-specific, there are in a great many instances what appear to be almost specific therapeutic results in certain cases of allergy, especially the vasomotor rhinitis type. It seems that the autogenous type of vaccine is the most efficacious. When nasal symptoms are being dealt with the specimens should of course be taken from the nose. In case of asthma it would seem that it is most logical to obtain the cultures from the sputum. It may be also that the regular periodic administration of vaccine extracts in these allergic patients may act in some way to maintain "allergic equilibrium." Whatever the way in which they produce may not be known, but allergic patients do better and some even get well when vaccines are given carefully over long periods of time.

HIGH CARBOHYDRATE DIET IN DIABETES MELLITUS.*

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and
JOHN EAGER HOWARD, M. D.,
Baltimore, Md.

We are reporting the progress of a case of diabetes mellitus, for which daily records are available for more than nine years. Although the case has several points of unusual interest, we wish to use it tonight as an example of a group of cases in which a relatively high carbohydrate diet has been employed successfully.

Miss C. O., a freshman of eighteen years, was referred to Dr. Lewellys F. Barker, by Dr. Guy W. Latimer, of Hyattsville, Maryland, on January 15, 1923. For five or six months she had been conscious of easy exhaustion. She continued her work at college until the end of November, one and a half months before admission, but by that time weakness kept her at home and she became very nervous. In spite of an enormous appetite and thirst, she lost twenty-five pounds. The rate of her heart became very rapid and her thyroid gland was found to be enlarged. On January 2nd, Dr. Latimer discovered sugar in the urine and she was put on a diet, but the loss of weight continued.

Examination revealed a thin, pale girl of eighteen years, five feet, four inches tall, and weighing only eighty-seven pounds, which is about forty pounds under her calculated ideal weight. Her only complaint was fatigue. The palms were moist; the hair normal in texture and distribution; the eyes were prominent; the lid slits wide; vonGraefe, Dalrymple, Rosenbach and Moebius signs all positive.

The tonsils were enlarged, especially the left one. The thyroid gland was diffusely and symmetrically enlarged to about three times its normal size. No nodules were felt.

The heart was rapid; normal in size; second sound was heard better to the left of the sternum in the second interspace. No murmurs except a soft systolic one at the pulmonary area. Pulse 104 to the minute. Blood pressure 118/60.

Slight fine tremor of the extended fingers.

The urine contained a large amount of sugar, acetone and diacetic acid. There was a slight secondary anaemia (hb. 72%); fasting blood sugar was 162 mgm. per cent. The

*Read before the Baltimore City Medical Society, March 18, 1932.

basal metabolic rate was 26% above normal for the patient's sex, age and body area.

While at rest in bed on a low carbohydrate, low protein diet of 1300 calories (P 16, F 115, C 53), gradually increasing in twenty-three days to 1800 calories (P 45, F 152, C 68), the patient remained sugar free after the third day, but lost seven pounds, to a weight of eighty pounds. At the end of one month the basal metabolic rate had fallen to +14 per cent. The diet was increased to 2500 calories (P 45, F 216, C 92). The protein constituent of the diet was kept as low as possible to avoid its specific dynamic effect in the face of hyperthyroidism. To keep the urine sugar free on this diet, the patient required forty units of insulin—twenty units before breakfast and twenty units before supper. In three and a half months she had regained twenty pounds of weight, but the insulin requirement had increased to thirty units twice daily. This was changed to a three-dose schedule, which could then be reduced to 22-6-18. The patient's weight rose to 114 pounds and the calories were reduced to 1900, which was 36.5 calories per kilo (P 45, F 160, C 72). This diet was maintained for two years, requiring an average of fifty units of insulin daily, divided into three doses.

As the basal metabolic rate remained normal and there was no indication of a return of hyperthyroidism, the protein was increased and the fat decreased, P 60, F 152, C 70 (1900 calories). The relief of a moderately severe case of exophthalmic goiter coincident with the control of a co-existent diabetes mellitus is an extremely rare occurrence.

From then on her weight remained slightly around 122 pounds. At one time, in December, 1925 (three years after onset), the insulin was reduced to 16-6-15, but a cold the following month pushed it up again to 25-20-25. In July, 1926, the basal metabolic rate was +3 per cent, weight 127 pounds, diet as above, insulin 17-8-17.

In November an infection (cold) resulted in acidosis with coma, which was treated in the Johns Hopkins Hospital. Following this the same diet was taken up and insulin 20-8-17 (forty-five units) proved adequate. Over five months a gradual reduction brought the insulin to 17-5-16 (38 units), but a cold forced the tolerance down and the insulin up again. By August, 1929, the insulin seemed best distributed 20-2-20 (forty-two units). The midday dose of insulin was a great nuisance when at work, but two doses of 26-0-26, or 24-0-28 produced either delayed insulin shock or glycosuria. Finally, in November, 1930, the patient came into the hospital for study to determine how best to take the insulin. The diet was changed to P 70, F 140, C 109. From blood sugars taken three times a day and at 11 P. M. and 4 A. M., we arrived at an insulin schedule of 22-0-20-12, the late dose being given at 11 P. M. On some days this caused insulin shock, other days sugar appeared in the urine and the blood sugar rose from 160 mgm. per cent at 7 A. M., to 310 mgm. per cent at 8:30 A. M., before breakfast. In December, 1930, the patient and her sister changed the night dose from 11 P. M. to 3 A. M. By October, 1931, this had been increased to four doses a day, 14-10-8-14 (forty-six units).

It was decided to change the diet by reducing the fat forty grams and increasing the carbohydrate ninety grams, thus keeping the caloric intake constant. This change was to be accomplished in five equal steps at ten-day intervals, the daily routine of life to remain constant throughout. During this process the insulin was administered in three daily doses: Twenty-four units one hour before breakfast, eight units one-quarter of an hour before lunch and fourteen units a quarter of an hour before dinner, making a total of forty-six units. During the period of change, with the exception of two days, there was no trace of sugar in the urine and, in fact, some additional orange juice or candy had to be eaten every day to stop insulin reactions which occurred usually in the afternoon. She gained a little weight, which was so distasteful to her that she reduced the amount of fat and carbohydrate eight grams each. On this diet it was possible to reduce the insulin dosage to 18-8-15 (thirty-eight units). In order to avoid gaining weight the patient insisted on a further caloric reduction to 1716 calories (thirty-three per kilo), P 70, F 84, C 170) and insulin 15-5-15. This altered the original plan from F —40 C +90 to F —56 C+60.

By virtue of this change in the diet, the following benefits have been secured:

1. The carbohydrate intake has been increased by sixty grams, thus allowing much more liberal and enjoyable meals which include, to quote from

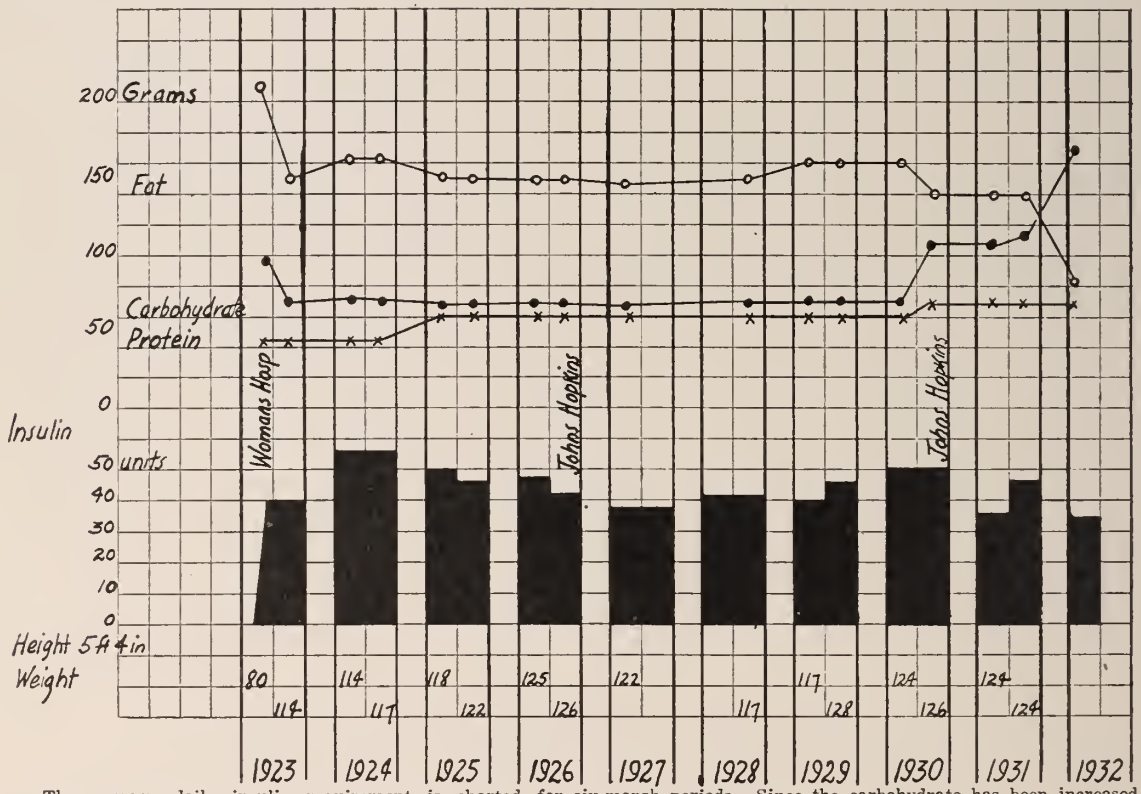
the patient, "apples, potatoes, grapes, bananas and two slices of whole wheat bread."

2. In spite of the increase of carbohydrate in the diet the insulin has been reduced by eleven units and can be given in three doses instead of four.

3. The daily caloric requirement sufficient to maintain the body weight fell from 1900 calories to something slightly over 1700. We are not sure that this reduction will persist over a long period of time, as the change in weight may be caused by a change in water metabolism and the caloric requirement may go up again when this has become stabilized.

4. The patient feels better and stronger. Her sister writes: "I am much pleased with this new arrangement, and Kitty never felt so good. Besides, it allows more freedom."

We have, then, presented a case which, after nine years of constant low carbohydrate, high fat diet was gradually shifted to a diet containing twice as much carbohydrate as fat. Following this rather drastic change the patient is greatly pleased, she feels better in every way, finds her diet much simpler to formulate and far more palatable. One very important advantage of the high carbohydrate diet, which has been emphasized in the Johns Hopkins Clinic by Dr. George A. Harrop, is the possibility of including a sufficient amount of milk, thereby assuring an adequate calcium intake. Milk is a particularly important component of the diet during childhood, especially as the American diet has a tendency to be low in calcium. Furthermore, she finds that she requires less insulin than formerly. This is a graphic example of the fact that insulin requirement is not dependent *alone* on the amount of available carbohydrate in the diet. It is true that the patient's total caloric intake is less on the new diet, and this may help to explain the lowered insulin requirement. We were unable to determine this accurately as the patient flatly refused to gain any weight, and we, too, wished her to remain slightly under her ideal weight. We feel sure that even if the calories were the same as on the old diet she would require certainly no more insulin than she did before the carbohydrate was increased by the new diet.



The average daily insulin requirement is charted for six-month periods. Since the carbohydrate has been increased and the fat reduced in the diet the insulin requirement is less than at any time previously.

A perusal of the recent literature shows that other writers have had similar experiences, some in a considerable number of well controlled cases. Rabinowitch[1] reports sixty-four cases of representative diabetics who were first regulated on high fat regimes (ratio approximately 1:3:1) and then transferred to much

higher carbohydrate diets of equal caloric value, the carbohydrate being approximately two to two and one-half times the fat. On both regimes he was careful to keep the patients slightly undernourished. His results in this series of cases were most gratifying. To quote from him, "The patients all feel better and *require no more insulin on the high carbohydrate, low fat diets* than they did on the low carbohydrate, high fat." He cautions that change from low to high carbohydrate diet must be made gradually.

Barach[2] reports a somewhat similar experience with fifty diabetic patients. He first placed these patients on diets of thirty to thirty-five calories per kilo, in a ratio of P 17 per cent, F 67 per cent, C 16 per cent, and carefully regulated them with insulin. Then, keeping the insulin constant, he gradually increased the carbohydrate ten grams at a time, subtracting each time its caloric equivalent in fat. This he continued so long as the patients remained well regulated on their previous insulin requirement. In three months time the average increase in carbohydrate intake was found to be forty-two grams. He says, "I am satisfied that these patients are better off for their change in diet. *They feel better* and as far as I can see they are better in every way."

Since 1926, Sansum[3] has been treating his diabetic patients with *very* high carbohydrate diets—200 to 400 grams—and reports very favorable results. On this regime, however, in moderately severe diabetics he finds it necessary to give very large amounts of insulin, frequently as much as 100 units daily. He does not keep his patients in an undernourished state, however. Sansum apparently is able quite easily to regulate his patients on these very high carbohydrate diets. The chief criticism by other authors, especially the British writers, has been that it is very difficult to prevent very high and very low blood sugars from following each other in rapid succession.

Discussion

For various reasons, it is not our aim tonight to enter into the theoretical advantages or disadvantages of higher carbohydrate diets. Whether or not they tend to lessen the incidence of arteriosclerosis by lowering the total blood fat can be discussed only from a speculative point of view. Similarly, whether or not high carbohydrate diets tend to stimulate the pancreas, thereby ultimately improving the hypoinsulinism, is a point that will require many years of trial to determine. We have attempted, however, to point out some of the obvious practical advantages of such a dietary regime. Joslin[8] says, "Insulin since its advent has steadily increased the carbohydrate in the diet." He points out that the average carbohydrate intake in the Deaconess Hospital *now*, in different groups of diabetics, varies between 125 and 144 grams, whereas, before the use of insulin, in 1917, it averaged 43 grams. Joslin also stresses the importance of undernutrition in the optimal regulation of the diabetic.

In a recent symposium on diabetes, held in England,[4] all were agreed on higher carbohydrate diets, but there was no unanimity of opinion *as to how high*. In 1931, Poulton[5] stated that the average healthy Englishman consumes 250 grams of carbohydrate daily. When, in the treatment of diabetic patients, the carbohydrate falls below this figure but still is above 100 grams, the term high *carbohydrate diet* should be used according to the normal standard today. In referring to his experience with higher carbohydrate diets (speaking of carefully balancing the carbohydrate and insulin so as to keep blood sugar normal throughout the twenty-four hours), he says, "Curiously enough this adjustment has been made as easily with the higher as with the lower carbohydrate diets."

Physicians have for some time been thinking along the lines of higher carbohydrate diets. Van Noorden's oatmeal day was based on much the same principle. As long ago as 1919, Hamman and Hirshman[6] showed that ingestion of a second dose of glucose produced a smaller rise in the blood sugar than the first. Adlersberg and Porges,[7] *who were among the first to advocate higher carbohydrate diets*, feel that it is the higher intake of fat which *impairs the carbohydrate tolerance* in high fat diets. As proof of this diabetogenic action of fat, they cite their interesting experiments on normal persons, in which they showed that if a larger amount of fat is given on the day preceding a sugar tolerance test there is considerable reduction in the sugar tolerance of the patient. This fact has been pointed out by Southwood[9] in 1923 and since then by several other observers.[10, 11] Barach,[2] whose article we quoted above and who is quite enthusiastic about higher carbohydrate diets, feels also that it is the reduction of the fat which is of chief bene-

fit and not the raising of the carbohydrate. The rarity and mildness of diabetes in countries where carbohydrate consumption is greatest and fat is lowest has long been pointed out and recently used as recommendation of higher carbohydrate intake.

Before closing this discussion, it would be unfair not to mention that there are still those who hold to the old idea of high fat diets in the treatment of diabetes. Foremost among these are Allen, of New York, and Newburgh, of Ann Arbor, who contend that such diets, while maintaining adequate bodily nourishment, are without danger of producing acidosis. The tendency toward the use of diets higher in carbohydrate is clearly indicated, however, by the reports from many clinics. Theoretically, we see no contraindications, and we advocate its further trial on the basis of our own experience as well as the results obtained by others.

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IT IS NOT A BED OF ROSES.

L. M. HINES, M. D., Abingdon,* Va.

Truth, lies, and sarcasm have been piled upon the broad shoulders of the rapidly vanishing country doctor during the past few years and the eyes of the laity have been turned to the specialist, until economic depression has made it necessary for the pendulum to swing in the other direction, so today we find in many localities the general practitioner is considered not a mere convenience but a *necessity*. Stepping out of a hospital with modern equipment, efficient nursing care and consultation on all sides into a panorama of complaints, diseases, injuries, etc., is enough to discourage the bravest medical student that ever launched his vessel, but after a few long, hard days, sleepless nights, and things begin to straighten out, you begin to feel a new responsibility for the welfare of those under your care, different from what you had while working in a hospital. It is not simply a "case" of pneumonia or a fractured arm, but it is the individual whose life and future earning capacity may depend upon what you do. It is with such a background that I wish to relate a few of the many interesting experiences during my four years of general practice in an isolated mountain section of Southwest Virginia.

Did you ever stop to think of the handicaps under which we must work! The hardships we must endure, practicing back in these mountains where the roads end and the trails begin! Ruts, rocks, mud, snow, ice and high water are but a few of the obstacles we encounter when making a call, ofttimes trees blown across the trail, or large rocks rolled down, both of which must be removed before the trusty little Ford is permitted to pass. Such toll gates collect their fees of manual labor at the hands of the doctor, often on a dark stormy night, while the rain comes down in torrents. A pick "to dig her out" or an ax "to chop a road" is an absolute necessity for complete equipment. I have used five Fords for a combined total of 75,000 miles, driving through all kinds of weather, over all kinds of roads, gambling with death to aid the sick or relieve the suffering.

Picture a rude mountain hut built of logs. It is in the wee hours of night, your patient lying in bed, surrounded by anxious members

*Recently of Drill, Va.

of the family, together with curiosity seeking neighbors, and various "home remedies" of "teas," "poultices" and concoctions of every known variety are evident at all times. The crowd opens just sufficient for the doctor to pass to the bedside; there with the aid of a very poor lamp or often just a mining lamp for light, you make your examination and bedside diagnosis without laboratory tests, references or consultation; prescribe your treatment and fill your own prescription, because you are expected to carry all the drugs needed, as drug stores are miles away. Then you must act as nurse where home environment is extremely poor. Sometimes no one in the family can read the directions you have so carefully written out. They know absolutely nothing about nursing care, hygienic conditions or the laws of sanitation. How can we hope for results? It is through the kind hand of Providence that many of our patients are permitted to live.

Every day is a pioneer day, filled with adventures. We deliver a baby before breakfast, drain an abscess, dress a hand, strap a back, extract a tooth after breakfast, make a couple of examinations, give a few treatments and a lot of advice to anxious mothers, how to feed their babies, make a half dozen scattered calls, treating bad colds, headache, diarrhea, perhaps send an appendix case to the hospital for operation, and then rush in and grab a sandwich for lunch before starting on a 20-mile call back in the mountains. Folks all along the road hail you for medicine or advice. You must always stop; one long call often means a dozen before you get back home. Honest folks have long since retired ere you return; you sit down at your table to get a little much needed nourishment when your better half begins rattling off calls which came during your absence. You get up from your midnight supper table, take one longing glance towards that comfortable old bed as you pick up your medicine case and hat and start "over the mountain" to see the little girl who fell and broke her arm, or the old gentleman who had another attack with his heart. Who knows what time he gets home? Who cares, other than members of his immediate family, unless one needs his service? And so it is day after day and night after night; any routine schedule would be shattered into oblivion.

It makes us shudder to think of puerperal sepsis and we always try to use the best technique possible, but one night two years ago, I was called to see a young single girl whose parents had driven her away from home because she had "gone astray." It was rather chilly that night. As I entered, there was the girl tossing around all over the bed, crying, and raising a terrible howl. Her mother, who couldn't resist a mother's love, was present, and I have never heard such a sermon as she was giving her daughter. It was enough to touch the heart of the worse sinner in the world. They had no fire, the room was cold, with cracks in the wall that a cat could jump through. I went out, picked up some sticks and kindled a fire in that funny little stove with its pipe running out through a hole in the wall. I asked for some water, but there was none in the house, so I took a bucket, went to the creek after water and sat it on the stove to boil. By this time the house was full of smoke, the girl's pains had gotten much harder, and the old lady was at the height of her sermon. I just had a mining lamp for light, but it didn't make any difference, you couldn't see anyhow. I was cleaning up, getting ready to make an abdominal examination, when the girl yelled, "come here quick, this baby is coming." I rushed to the bed, and, sure enough, the baby was born and began crying like a two year old. I tied and cut the cord, then asked for something to wrap the baby in, but nothing could be found, so I took my gown and wrapped it up. After delivering the placenta, I started to clean up the bed and found two other children, over behind the mother. I took these out, both were sound asleep, and laid them on the floor behind the stove. There was only one cover in the house and it was over the mother, no linens of any kind. When I started to dress the baby, there were no clothes, so I took a shirt off of one of the little tots behind the stove, put him in bed with his mother, using his shirt for the entire outfit for the newborn. Mother and baby both got along fine, both living today. How did they do it?

An emergency call came to go to Grissum Creek, seven miles distant, being told a man was bleeding to death from his nose. Arriving twenty minutes later, I found the patient unable to speak, very weak, pale, cold and clammy, no radial pulse, blood streaming from both nares, while the good wife held a wash basin two-thirds full of blood. An old withered white-haired lady stepped up and said, "Doc, it'll stop in a minute; I just got here

and tied a yarn string around his little finger; that will sure stop blood." Well, for fear something might go wrong and the yarn string fail to do its buty, I thought it would be a safe procedure to pack the nares and save the patient. I understand the old lady still accepts her share of the praise.

Late one afternoon last summer, I was called to see a woman whose baby was only a couple of days old. She had gotten out of bed and began hemorrhaging, until all the neighbors had become greatly alarmed. As I walked into the house, I noticed an axe lying under the patient's bed with the cutting edge turned up. I thought this rather unusual, so, through curiosity, I asked why the axe was in such a rare position, and was informed by one of the old "residenters" that by placing an axe upright beneath a woman's bed, you could always stop hemorrhage. This was something I had never been taught in a medical school. After standard treatment, the patient made an uneventful recovery. Just how much credit the axe received, I shall never know.

Returning one night from a distant call, I found waiting in my office a middle-aged man who was injured that afternoon while filing a circle saw. Standing with the saw between his legs while he worked, the engineer had turned on the steam, throwing the saw into motion. Catching the patient, the saw tossed him over the top and he landed several feet away. I found upon examination a torn, ragged wound, the skin, external sphincter and mucous lining of the rectum being cut. I told this man of the great danger from "loss control" of his bowels, and advised that he go to a hospital at once. He refused and asked that I repair him. A small soap and water enema with ten drops of turpentine gave good results, after which I bathed the parts thoroughly with soap and warm water, dried, then packed the rectum fairly tight with iodoform gauze; then I cleansed the wound with hydrogen peroxide, and saturated it with tincture of iodine. I used twenty-three interrupted sutures, the structures being approximated as nearly as possible. The wound was packed with iodoform gauze, and the buttocks pulled together and strapped with broad pieces of adhesive. This was done without anesthetic. No drainage was used. There was no sloughing and patient was able to walk around in the house at the end of two weeks, having just as good control of his bowels now as before his injury.

Despite the general improvement in hygienic conditions and the use of prophylactic vaccine, causing a marked reduction in the number of cases during the recent years, *typhoid* is by no means a thing of the past. Only last fall I found ten members in one family piled up in two rooms of a small house, swarming with flies, filled with dirt, without food, sufficient cover, or even enough fuel to keep them comfortable. The father was dying and death seemed imminent for other members, but fortune shined again. We were able to get a most efficient nurse, who worked both day and night, taking care of all the sick ones, doing her own cooking, cleaning the house, etc. We had but one more fatality, a grown young man, while convalescing, got out of bed and hemorrhaged to death.

A young white woman came to my office complaining of "skin disease." Examination showed the entire body surface to be completely covered with ringworm. Scratching continously, she seemed to be in a very uncomfortable condition. After cleansing the skin with warm water and green soap, I touched each ring with a 25 per cent solution of silver nitrate. There was only slight burning when she left the office, but thirty minutes later I was summoned to hurry down, "she was on fire." I was greatly surprised to see my patient lying stretched out on the bed, nude as a Grecian Goddess, while four relatives, each holding a corner of a sheet, were fanning for dear life. She had the most horrible expression on her face that I have ever seen, and the burning was so intense that she was almost distracted. While panting for breath, she said, "Doc, stop this burning; I'm in hell." Various external remedies had no effect, so I had to resort to a hypodermic of morphine to get relief. The silver nitrate not only killed the ringworm, but planted in the mind of this woman a fear of the world yet to come that she will long remember.

Conclusions

Regardless of the hardships and inconveniences here in the old mountains, there is a bright side to such a practice—the quiet solitude, far removed from the din of city lights and dust laden air; where "gangsters" and "kidnappers" are myths, while the dreamy old "moonshiner" is a respected citizen. The pure

fragrant breeze not only stimulates a desire to push forward to higher and better things, but makes you stop and consider the beauty of His handiwork. A hale and hearty race inhabit this mountain section, many living to a "ripe old age."

Yes, we have lots of good folks, some well educated, college and university graduates. We have schools, churches, radios, bridge parties, electric refrigerators and many of the necessities considered of vital importance by our city neighbors. Life is a funny road, but we all like to travel it just the same.

THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.*

KINLOCH NELSON, M. D., Richmond, Va.
McGuire Clinic.

Mr. President, Members of the Academy:

The subject allotted to me is the diagnosis of pulmonary tuberculosis. I shall confine my remarks to the early diagnosis of this disease. In attempting to diagnose any case certain steps in examination are usually carried out. These are the recording of an accurate and thorough history, a complete physical examination, and those laboratory examinations which seem indicated from the first two portions of the general survey. Under this last heading are included X-ray and other special examinations or tests. It is my purpose to discuss the diagnosis of pulmonary tuberculosis along these three general lines. Also, since the manifestations of this disease vary considerably in children as compared with adults, it seems best to consider the adult and the childhood types separately. Because certain symptoms, signs, and laboratory tests merely lead to the suspicion of this disease and because other findings are considered as positive proof of its presence, some classification along this line will also be attempted.

The Adult Type

1. *History:* All of you are familiar with the symptoms which commonly accompany pulmonary tuberculosis in the adult, yet the vast majority of these frequently occur in other affections, and numerous cases of tuberculosis occur without many of these symptoms so that they can scarcely be called more than suspicious. Such symptoms are persistent cough with or without sputum but particularly with sputum, pain in the chest, afternoon temperature elevation, vague digestive upset, especially loss of appetite, loss of weight, lassitude, particularly progressive lassitude, and, finally, exposure to an active case.

Certain of these, though widely recognized as characteristic of this disease, seem to be of doubtful value because of the great difficulty in obtaining an accurate history of them. I speak particularly of weight loss and afternoon elevation of temperature. It seems almost impossible to obtain any really accurate data in the majority of cases as to whether or not they have recently lost weight. Though the popularity of the procedure is apparently growing, very few people know how to or do take their temperatures even when feeling feverish, so that this observation is not available in most cases coming in for diagnosis.

Two of the above facts obtainable from the history are worthy of more than passing mention, chiefly because their importance seems to be generally overlooked. These are, first, exposure to an active case uninstructed in, or unwilling to comply with, those precautions which are so necessary to prevent the spread of their disease. It is safe to say that anyone constantly exposed to an active case will eventually acquire tuberculosis. In the second place, progressive lassitude is at times *the* suspicious fact which later leads to the diagnosis. This may best be illustrated by the following case.

A twenty-seven year old manicurist separated from her husband, accustomed to a rather active night life, about a month before examination began to notice a loss of interest in the parties and nocturnal activity which she had previously enjoyed. On her return home from work she had little desire for supper and felt like going to bed, which she frequently did just after supper. During the next week or two this lack of interest and pep increased so that she could hardly continue at her usual occupation in the afternoons. She began to feel like going home to bed after lunch. This lassitude was accompanied by nervousness and loss of appetite. There were few if any other symptoms, such as cough, sputum, temperature, etc. Weight loss was indefinite. The patient's mother had died of tuberculosis some thirteen years before. Subsequent examination showed a moderate tuberculosis of the right upper lobe.

*Read as a part of a Symposium on Pulmonary Tuberculosis at a meeting of the Richmond Academy of Medicine, Richmond, Va., May 16, 1932.

Lastly, there is one fact obtainable from the history which is positive evidence of tuberculosis, namely, hemoptysis, the coughing up of blood, especially hemoptysis of a dram or more. This symptom is frequently not so much a coughing up of blood as it is a clearing of the throat accompanied by spitting bright red blood, usually frothy. With such a history the presence of pulmonary tuberculosis may be assumed. To put this another way, in the presence of any of the other symptoms it is necessary for the physician to prove the presence of pulmonary disease, whereas in the presence of hemoptysis it is up to him to prove that pulmonary tuberculosis is absent.

2. *Physical Examination:* Those physical findings which may be regarded as suspicious are: 1. General emaciation. This is far from common, and, in fact, seems to be relatively uncommon in early cases. 2. Elevated temperature. This is frequently absent at the time of examination. 3. Certain observations in the examination of the chest itself, as muscle atrophy or spasm, especially on one side and in the upper portion of the chest, a lagging in expansion on one side as compared with the other and those findings on percussion and auscultation which indicate lung infiltration.

None of the above signs can be thought of as more than suspicious because they are frequently recorded where no real pathology can be demonstrated in the lung, and, what seems more important, they are often absent in the presence of a considerable amount of lung involvement.

From the physical examination two facts stand out as positive evidence of pulmonary tuberculosis. First is persistent medium moist râles above the second rib, especially those heard during inspiration after practically complete expiration and cough, and second are those findings which indicate pleurisy with effusion. Some one has said that 90 per cent of cases showing pleurisy with effusion have tuberculosis and that the other 10 per cent have tuberculosis also.

3. *Laboratory Examination:* Certain recently developed tests may be regarded as helpful: first, the alteration in the normal relationship between the polymorphonuclear leukocytes and the small lymphocytes. This observation is considered by some of great significance in determining progress and prognosis, neither of which enter into this particular discussion.

Second, various workers have been experimenting with the chemical fractions obtained from tubercle bacilli. From their work it seems possible that some standardizible material, probably a protein, may be developed in the near future which will replace old tuberculin as the basis of the tuberculin test. However, results with the tuberculin test itself in the adult are confusing and unsatisfactory, so that it has little place as an aid in the diagnosis of these cases.

As positive laboratory procedures, I will name, first, the finding of tubercle bacilli in the sputum, considered as proof positive of the presence of tuberculosis in the chest; and, second, the examination of aspirated chest fluid with guinea pig inoculation of same, and the development of tuberculosis in the guinea pig, usually in a period of six weeks. It must not be forgotten that a negative sputum or chest fluid inoculation does not rule out the presence of tuberculosis, but that only through repeatedly negative examinations is it possible to assume the absence of this disease.

Third, I have purposely left until the last that most important of all diagnostic procedures, X-ray of the chest. The details of the X-ray in pulmonary tuberculosis will be discussed by Dr. Lawrence O. Snead but I cannot refrain from pausing here to urge more and more X-ray. All of us are familiar with those cases who have few if any of the characteristic symptoms, no physical signs, and yet a positive X-ray. Much has been said from time to time about the too great standardization of modern medicine, a too great dependence upon mechanical aids to diagnosis, and yet such a feeling in questionable cases, accompanied by other considerations, such as the expense, by postponing or deferring this most important of examinations, definitely militates against the early diagnosis of pulmonary tuberculosis. To quote numerous authors, "Early X-ray means early diagnosis."

The Childhood Type

Early pulmonary tuberculosis in the child as compared with that in the adult is rather a disease of the tracheo-bronchial lympth nodes than the actual lung parenchyma. Constant remembrance of this fact will be of great help in understanding the diagnostic difficulties encountered here.

1. *History:* When compared with adult cases the symptoms have proven of little help. Those which lead to a suspicion of probable tuberculosis are much the same, namely, persistent cough with or without sputum, loss of weight, pain in the chest, and chronic digestive upset, especially loss of appetite. All of these are far too frequently absent in the childhood cases. For example, of fifty cases diagnosed childhood tuberculosis in the Early Diagnosis Campaigns of the Richmond Tuberculosis Association during the past two years, only nineteen, or 38 per cent, had any symptoms referable to the chest. In the remaining 62 per cent, with the exception of very few cases, the symptoms were so vague and indefinite as to be almost valueless.

Historical evidence which is practically positive is, first, constant exposure to an active case. While important in the adult, this is of far greater significance in the child and is the most valuable single piece of information gained from the history in the above fifty cases. Fifty per cent were contacts, and a number of others were probably associated with an active case.

Second, but of less importance because of less frequent occurrence, a history of past tuberculous infection, particularly in the glands of the neck, is very strongly suspicious of tracheo-bronchial disease in any case.

As for absolutely positive symptoms of tuberculosis in the child, little, if any, exist. Here, again, hemoptysis may be so considered. Yet, from the very nature of the pathology, one would expect it to be unusual, as is actually the case. In the fifty cases we have studied, hemoptysis definitely occurred in only one case, a boy, aged seventeen, who had an adult type of the disease, and, therefore, really does not come under this heading.

2. *Physical Examination:* The physical examination of children is also practically valueless in the diagnosis of tracheo-bronchial tuberculosis. As suspicious evidence may be mentioned under-weight as compared with the average standard for that age, height, and sex. Of fifty cases, 50 per cent were more than 10 per cent below the expected weight. Since 50 per cent, therefore, were within normal limits, the value of this finding may readily be seen.

Examination of the chest by the ordinary methods of inspection, palpation, percussion, and auscultation has been of little if any assistance. Of fifty cases, only eighteen, or 36 per cent, showed any findings, and in only one of these were they at all definite. This, again, was the above-mentioned case of the adult type in a boy of seventeen years.

3. *Laboratory Examination:* While those newer tests, such as the blood counts and tuberculo-protein skin tests, will doubtless prove of value eventually, they can only be considered of probable value at this time.

The tuberculin test, either the scratch method of Von Pirquet, or the intradermal Mantaux test, when definitely positive, is positive evidence of tuberculous infection, and may be considered as very suspicious if not positive evidence of the disease tuberculosis.

As in the adult, the final definite diagnosis of childhood tuberculosis rests on two procedures,—first, a positive sputum, which is a rare occurrence in a child, and. second, a positive X-ray.

Summary

To summarize: In the adult, the five points given as positive evidence of tuberculosis by Lawrason Brown may be stated here. They are (1) hemoptysis of a dram or more; (2) pleurisy with effusion; (3) persistent medium moist râles above the second rib; (4) a positive sputum; and (5) a positive X-ray.

In the child it is more difficult to outline a series of findings which may be relied upon as diagnostic of early tuberculosis. However, certain facts stand out, (1) constant exposure to an active case; (2) a positive tuberculin; and (3) a positive X-ray. In both adult and child the greatest of all is X-ray.

In conclusion, some of you have probably noted that I have avoided the term, active tuberculosis. Whether or not a given case is suffering from active tuberculosis is often a problem which may only be solved by constant and long continued observation.

In the adult, clinical study coupled with repeated X-ray examinations will usually serve to determine whether or not there is activity in a given case. On the other hand, clinical observation in early cases in childhood is many times of little value, and it is only by serial X-ray studies that real information may be obtained as to whether the tracheo-bronchial disease is advancing or retrogressing.

McGuire Clinic.

Correspondence

Over Production of Doctors.

To the Secretaries of the County Medical Societies:

The following resolution was passed by the Fulton County and Cobb County (Georgia) Medical Societies at their regular meetings a few weeks ago, after the reading of a paper entitled "The Economic Status of the Medical Profession," which appeared later in *The Journal of the American Medical Association*, October 15, 1932, page 1358, under the Department of Medical Economics.

Since this article appeared, we have had numerous letters from physicians all over the United States urging that this plan be placed before the different county, state and national societies for their consideration and adoption.

We are asking that you place this or a similar resolution before your society and ask for its adoption. Have it signed by your proper officials and forward to the secretary of the Medical Association of your State.

These resolutions will be placed in the hands of the delegates to the American Medical Association at its next annual meeting.

Resolution

Whereas, The medical profession of the United States is suffering losses all out of proportion to its ability to endure, and

Whereas, Our losses are not so much due to the financial depression as to over-production of doctors and decreased demand for paid medical service generally, and

Whereas, The production of doctors is far in excess of the population increase;

Therefore, we, the members of the..... County Medical Society respectfully request the Medical Association of ....., the other State Medical Associations, the Southern Medical Association and the American Medical Association to adopt this or similar resolutions requesting the Medical Colleges of the United States to reduce the number of graduates each year until the law of supply and demand has been fully complied with. The number of graduates to be determined by a national committee appointed by the President of the American Medical Association.

Respectfully submitted,

....., M. D., President.

....., M. D., Secretary.

Note.—The above letter and resolution are passed on to our members for their consideration.

Analyses, Selections, Etc.

Two Monuments to Doctors.

Our esteemed evening contemporary has ascertained that two doctors of the South have been remembered by public memorials, that in Richmond, Va., there stands a monument to Dr. Hunter McGuire, medical director of Stonewall Jackson's army, and subsequent to the war a noted physician and surgeon, and that our own Georgian, Dr. Crawford W. Long, has been honored by a monument at Jefferson.

Two doctors out of the long array who have served humanity nobly and successfully. Is that the best we can do? Soldiers of varying degrees of ability are remembered in scores, perhaps hundreds of monuments scattered all over the country. Politicians whose statesmanship is now looked upon as of doubtful virtue, stare at one in bronze and marble wherever we go. But the physicians who have studied and fought to save life, to relieve humanity of suffering, who have given years, and sometimes their lives, to succor mankind, are permitted to drop into the grave and have their memories forgotten.

We still insist that when men and women learn to measure service as it should be measured there will be more monuments to the doctors, the men who have lessened the horrors of disease, the agonies of operations, snatched men and women from the very jaws of death, prolonged the span of life. With two monuments found to honor them we stand pat on the general proposition that this class of public benefactors has not been honored as they should be.—(*Morning News*, Savannah, Ga., Oct. 13, 1932.)

Proceedings
Medical Society of Virginia

MINUTES OF THE SIXTY-THIRD ANNUAL SESSION OF THE MEDICAL SOCIETY OF VIRGINIA

Richmond, Virginia, November 1, 2, and 3, 1932

GENERAL SESSIONS

Tuesday, November 1

The Medical Society of Virginia met for its Sixty-third Annual Session in the ballroom of the Hotel John Marshall, Richmond, and was called to order at 8:30 P. M. by Dr. J. Powell Williams, Chairman of the Committee on Arrangements.

The invocation was said by the Reverend George E. Booker, D. D., Pastor of the Centenary Methodist Church, Richmond.

Dr. W. Brownley Foster, Director, Department of Public Welfare, City of Richmond, delivered the Address of Welcome in the absence of the Mayor of Richmond, Honorable J. Fulmer Bright, whose name appeared on the program.

At the request of Chairman Williams, Dr. Thomas W. Murrell, Chairman of the Committee on Golf, awarded the trophies to the winners in the tournament.

Dr. Williams then presented the past presidents of the Society in attendance at this meeting.

Dr. I. C. Harrison, Danville, President, read his address, which was a historical sketch of the Medical Society of Virginia.

Dr. Joseph A. White, Chairman of the Membership Committee, read the list of members who had died during the year just ended.

List of 27 Members of the Society Whose Deaths Have Been Reported Since the 1931 Meeting

Dr. Daniel Shelly Solliday, Hillsboro, Va., November 3, 1931.
Dr. Samuel L. Rucker, Moneta, Va., October 4, 1931.
Dr. Ligon J. Marshall, Broadway, Va., November 23, 1931.
Dr. J. T. Davis, North Emporia, Va., August 4, 1924.
Dr. Reid White, Sr., Lexington, Va., November 29, 1931.
Dr. Edward T. Hargrave, Norfolk, Va., December 1, 1931.
Dr. Percy Kline Graybill, Fincastle, Va., December 5, 1931.
Dr. James Benjamin Abbitt, Norfolk, Va., January 12, 1932.
Dr. Reginald R. Walker, Washington, D. C., January 15, 1932.
Dr. Lorrimer Fauntleroy James, Richmond, Va., December 28, 1931.
Dr. Roscoe C. Carnal, Pulaski, N. Y., January 13, 1932.
Dr. John A. Tipton, Hillsville, Va., April 23, 1932.
Dr. Thomas J. Stanley, Beaver Dam, Va., April 14, 1932.
Dr. Thomas Marshall Jones, Alexandria, Va., May 11, 1932.
Dr. George Grant Howery, Christiansburg, Va., March 8, 1932.
Dr. Etta May Hadley-Judd, Lynchburg, Va., March 30, 1932.
Dr. Charles Rollin Grandy, Norfolk, Va., June 10, 1932.
Dr. Thomas Jackson Sims, Newport News, Va., June 9, 1932.
Dr. William Thomas Warriner, Crewe, Va., June 5, 1932.
Dr. Edmund Dozier Hunter, Norfolk, Va., June 30, 1932.
Dr. Adrian Baldwin, North Fork, Va., November 1, 1931.
Dr. Edward C. S. Taliaferro, Norfolk, Va., July 28, 1932.
Dr. Mark Wallace Peyser, Richmond, Va., July 29, 1932.
Dr. Edwin M. Sneed, Stafford Court House, Va., September 13, 1932.
Dr. Lomax Plater Tayloe, Vienna, Va., September 12, 1932.
Dr. Alfred Leftwich Gray, Richmond, Va., October 13, 1932.
Dr. Thomas Marshall Taylor, State Farm, Va., October 18, 1932.

The audience sat with bowed heads for a minute of silent tribute to their memory.

President Harrison presented Mrs. J. Allison Hodges, of Richmond, President of the Woman's Auxiliary to the Medical Society of Virginia. She stated that Mrs. Walter Jackson Freeman, who was scheduled to speak at this time had died suddenly on the previous Thursday but that the Auxiliary was fortunate in having another of the national officers, Mrs. A. Haines Lippincott, of Camden, N. J., first president of the Woman's Auxiliary to the New Jersey State Medical Association and now chairman of the Committee on Public Relations of the Woman's Auxiliary to the American Medical Association.

Mrs. Lippincott gave an attractive talk in which she explained how the Auxiliaries might be of service to the doctors. She also gave a very lovely eulogy to Mrs. Walter Jackson Freeman.

Dr. Robert Bayley Osgood, Professor of Orthopedic Surgery Emeritus, Harvard University Medical School, Boston, Mass. (invited guest), was presented by President Harrison and read his address, entitled "The Most Generally Prevalent, the Most Inadequately Treated, and the Most Easily Controlled Chronic Disease" (illustrated by lantern slides).

President Harrison presented Dr. William Minor Dabney, of Ruxton, Md., also an invited guest, who then read his address: "A Third of a Century of Medical Education in the United States: A Critical Appreciation by a General Practitioner."

The program for the evening session having been completed, the meeting then adjourned.

Wednesday, November 2

The Medical Society of Virginia convened in general session in the assembly room of the Richmond Academy of Medicine building, with President Harrison in the chair, and was called to order at 9:20 A. M.

Dr. I. A. Bigger, Richmond, read his paper on "Penetrating Wounds of the Thorax" (illustrated by lantern slides), which was discussed by Dr. R. L. Payne, Norfolk.

The paper of Drs. E. C. Drash, University, and O. N. Shelton, Sanatorium, entitled "Division of Pleural Adhesions in the Pneumothorax Treatment of Pulmonary Tuberculosis: Report of Ten Cases" (illustrated by lantern slides), was read by Dr. Drash and was discussed by Drs. Hugh Trout, Roanoke; Dean B. Cole, Richmond; Edwin P. Lehman, University; O. N. Shelton, Sanatorium; I. A. Bigger, Richmond; C. L Harrell, Norfolk; F. S. Johns, Richmond; Roy K. Flannagan, Richmond, and by Dr. Drash, in closing.

Dr. Charles Carroll Smith, Jr., Norfolk, read his paper on "Tumors of the Ribs: Report of Case," which was discussed by Drs. C. L. Harrell, Norfolk, and I. A. Bigger, Richmond.

The following papers were read as a Symposium on Diseases of the Heart:

"The Etiology and Prevention of Heart Disease," by Dr. J. Edwin Wood, Jr., University.

"Acute and Subacute Endocarditis," by Dr. Walter B. Martin, Norfolk.

"Coronary Disease," by Dr. George B. Lawson, Roanoke.

"The Use of Drugs in Heart Disease," by Dr. William B. Porter, Richmond.

These papers were discussed by Drs. Manfred Call, Richmond; B. M. Randolph, Charlottesville; W. A. Plecker, Richmond; and in closing by Drs. Wood, Martin, and Porter, and again by Dr. Plecker.

The program having been completed, the morning session adjourned at 12:35 P. M.

Wednesday Afternoon Session

The Society convened in the assembly room of the Richmond Academy of Medicine building and was called to order at 3:00 o'clock by Dr. F. H. Smith, of Abingdon, Vice-President.

Dr. A. I. Dodson, Richmond, read his paper entitled "A Comparative Study of Prostatectomy and Transurethral Resection of the Prostate," which was discussed by Drs. S. Beverly Cary, Roanoke; Clyde F. Ross, Richmond; W. W. S. Butler, Jr., Roanoke, and Stanley H. Graves, Norfolk, and in closing by Dr. Dodson.

Dr. Beverley R. Tucker, Richmond, read his paper entitled "Consideration of Some of the Newer Methods in the Treatment of Encephalitis," which was discussed by Drs. Frank H. Redwood, Norfolk, and David C. Wilson, University.

Dr David C. Wilson, of the University of Virginia Hospital, University, read his paper entitled "Outline of a Personality Study for Office Use," which was discussed by Dr. Beverley R. Tucker, Richmond.

Dr. J. Shelton Horsley, Richmond, presented a paper on "Cancer of the Colon," which was discussed by Drs. Edwin P. Lehman, University; R. L. Payne, Norfolk; Claude Moore, Washington, D. C., and in closing by Dr. Horsley.

Dr. G. Paul LaRoque, Richmond, read his paper on "Partial Resection of the Stomach for Ulcer," which was discussed by Dr. J. Shelton Horsley, Richmond, and in closing by Dr. LaRoque.

Dr. J. Morehead Emmett, Clifton Forge, read his paper on "Postoperative Tetany," and this was discussed by Dr. James H. Smith, of Richmond, and in closing by Dr. Emmett.

The program having been completed, the afternoon session adjourned at 5:45 o'clock.

Wednesday Evening Session

The Society met in the assembly hall of the Richmond Academy of Medicine building and was called to order at 8:15 P. M., by the President, Dr. I. C. Harrison.

Dr. M. E. Lapham, Field Clinician in Obstetrics, Medical Society of Virginia, read his paper entitled "Prenatal and Postnatal Instruction: Report of Work Being Conducted by the Medical Society of Virginia," which was discussed by Drs. Greer Baughman, Richmond; A. E. Turman, Richmond; H. B. Sanford, Richmond, and J. Bolling Jones, Petersburg.

Dr. Warren F. Draper, State Health Commissioner, Richmond, read his paper entitled "The Year's Progress in Health Work Relating to the Medical Profession," which was discussed by Drs. W. O. Bailey, Leesburg; David C. Wilson, University; Wm. B. McIlwaine, Petersburg; M. B. Hiden, Warrenton; Donald S. Daniel, Richmond; by Dr. Draper in closing, and by Dr. G. F. McGinnes, Director of the Bureau of Epidemiology, State Department of Health, Richmond.

The paper of Dr. L. E. Starr (D. V. M.), Blacksburg, and Dr. Kenneth F. Maxcy, University, was read by Dr. Maxcy. This was discussed by Drs. Henry B. Mulholland, University; Wm. B. Porter, Richmond; H. B. Sanford, Richmond; again by Dr. Porter, and by Dr. Maxcy, in closing.

Dr. Regena C. Beck, Richmond, read her paper on "The Treatment of Malignant Neutropenia," which was discussed by Drs. William B. Porter, Richmond, and Walter B Martin, Norfolk.

Dr. Charles P. Ryland, Jr., Binghamton, N. Y., read his paper on "Some Results of Serum Therapy in Lobar Pneumonia," which was discussed by Dr. Walter B. Martin, Norfolk, and Mr. Aubrey Straus, Richmond.

The paper of Drs. E. G. Gill and John A. Pilcher, Jr., Roanoke, entitled "Observations in the Management of One Hundred Foreign Bodies in the Air and Food Passages" (illustrated by lantern slides), was presented by Dr. Gill and was discussed by Drs E. U. Wallerstein, Richmond; Claude Moore, Washington, D. C.; Thos. E. Hughes, Richmond; E. T. Gatewood, Richmond, and by Dr. Gill, in closing.

The evening session then adjourned at 11:20 P. M., the program having been completed.

Thursday, November 3

The Society met in the assembly hall of the Richmond Academy of Medicine building and was called to order by President Harrison at 9:30 A. M.

Dr. Donald M. Faulkner, Richmond, read his paper entitled "A Non-operative Treatment for Delayed Union in the Tibia" (illustrated by lantern slides), which was discussed by Drs J. T. Tucker, Richmond; J. B. Dalton, Richmond; J. Bolling Jones, Petersburg; A. M. Kimbrough, Norfolk, and by Dr. Faulkner, in closing.

Dr. Robert V. Funsten, University, read his paper entitled "A New Treatment for Fractures of the Os Calcis" (illustrated by lantern slides), which was discussed by Dr. William Tate Graham, Richmond.

Dr. R. DuVal Jones, Jr., Norfolk, read his paper entitled "Exophthalmic Goitre: A Review of Our Present Knowledge of the Etiology and Pathology of the Disease," which was discussed by Drs. A P. Jones, Roanoke; Carrington Williams, Richmond; Claude Moore, Washington, D. C.; Fred M. Hodges, Richmond, and by the author in closing.

Dr. Wright Clarkson, Petersburg, read his paper on "Neoplastic Diseases of the Skin and Mouth"

(with lantern slide demonstration), which was discussed by Drs. Fred M. Hodges, Richmond, and M. B. Hiden, Warrenton, and in closing by Dr. Clarkson.

Dr. Douglas VanderHoof, Richmond, read his paper on "Subacute Bacterial Endocarditis Following the Extraction of Teeth," which was discussed by Drs. T. Dewey Davis, Richmond, and W. E. Brown, Sanatorium; and in closing by Dr. VanderHoof.

The authors of the other papers on the morning program not being present, the session adjourned at 12:25 P. M., after a further informal discussion on the subject of Dr. VanderHoof's paper.

Thursday Afternoon Session

The Society met at 3:00 o'clock in the assembly room of the Richmond Academy of Medicine building and was called to order by President Harrison.

Dr. Harvey B. Haag, Richmond, read his paper on "The Pharmacology of Digitalis," which was discussed by Dr. D. C. Ashton, Richmond.

Dr. B. E. Harrell, Norfolk, read his paper on "Pyelonephritis, with Special Reference to Etiology," which was discussed by Drs. A. I. Dodson, Richmond; Joseph F. Geisinger, Richmond; and C. J. Andrews, Norfolk.

Dr. Donald S. Daniel, Richmond, read his paper entitled "Recent Progress in Prostatic Surgery," which was discussed by Drs. Lawrence T. Price, Richmond; J. Allison Hodges, Richmond; and Frank Johns, Richmond; and in closing by Dr. Daniel.

The paper of Dr. Warren T. Vaughan and Dr. W. Randolph Graham and Ruth Whitehead Crockett, Richmond, entitled "Hay-Fever Pollen Prevalences in Virginia: Review of a Six-Year Survey," was read by Dr. Graham and was discussed by Dr. J. B. Bullard, Richmond, and by Dr. Graham in closing.

Dr. Oscar Swineford, Jr., University, read his paper entitled "An Analysis of the Work of the First Year of the Allergic Clinic of the University of Virginia Medical School," which was discussed by Dr. J. B. Bullard, Richmond.

Dr. Lewis C. Pusch, Richmond, read his paper on "Ulcerative Syphilitic Lesions of the Stomach," which was discussed by Dr. S. W. Budd, Richmond.

Business Session

The report from the House of Delegates was read by Miss Agnes V. Edwards, Executive Secretary-Treasurer of the Society. After brief discussion, on motion, duly seconded, the report was adopted.

President Harrison: I want to thank all those who took part in the program. It went off promptly, and your papers were instructive and well thought out. Then I want to thank the Society, the committees and the members, for their loyalty and for the way they have treated me. I want to take issue with the doctor here on one point; I think that we have a great deal of loyalty in this Society. I have been about in the State a good deal in the last year or two, and the members of this Society whom I have seen think a lot of it. I think we are well organized, and I hope and believe that the majority of the members of our Society feel that way about it. There are many men who leave their practice and come to these meetings. I admit there ought to be more, but I think we have a good society; I think we are doing good work and advancing in our work, and I think as each year goes by we are going to do better and do more.

It gives me great pleasure at this time to present to you a man who I believe is qualified to make the best president we have ever had; I refer to Dr. Flippin. It gives me sorrow and pleasure to turn over the reins of government to Dr. Flippin.

Dr. J. Carroll Flippin, University: Dr. Harrison and members of the Society:

Perhaps the most inept thing I could do at this time, before the remaining faithful few, would be to make a speech, and I am not going to do it. I cannot escape, however, adding to the word of appreciation which I said to you a year ago, and say that I appreciate this honor. Any medical man in Virginia is highly honored by election to the presidency of the State Society. In my own case I accept it rather as a tribute to the office I hold in medical education in Virginia than to any merits of my own.

At this time I think it is customary for the incoming president to present the president-elect. About an hour ago Dr. Bates came to me and asked me to express his very great sorrow that he cannot be present at this hour. Dr. Bates wished me to explain that he is a rural practitioner and that he had received a call of the kind that not even a president of the Medical Society of Virginia would be able to neglect, and that he had to go home.

I believe there is very little else to be done at this meeting. According to the By-Laws of the Society, the president is required to announce the membership of the standing committees. There is one change each year in each committee, and the president also has the privilege of naming the chairman of the committee. To save time, I shall ask Miss Edwards to rise where she is and read the list.

List of Members of Standing Committees

The numbers given after each name indicate the length of term of office.

Scientific Work and Clinics: Dr. C. B. Morton (1), *chairman;* Dr. J. S. Horsley, Jr. (2); Dr. Jos. L. Wright (3).

Legislation and Public Health: Dr. Wright Clarkson (2) *chairman;* Dr. J. W. Robertson (1); Dr. P. St. L. Moncure (3).

Publication and Program: Dr. A. G. Brown, Jr. (2) *chairman;* Dr. R. L. Payne (1); Dr. John H. Neff (3).

Medical Economics: Dr. John O. Boyd (2) *chairman;* Dr. Ernest G. Scott (1); Dr. M. H. Harris (3).

Medical Education and Hospitals: Dr. J. W. Preston (2), *chairman;* Dr. W. O. Bailey (1); Dr. Jos. T. Buxton (3).

Membership: Dr. J. A. White (2), *chairman;* Dr. A. W. Hammond (1); Dr. Isaac Peirce (3).

Ethics and Judiciary: Dr. St. Geo. T. Grinnan (2), *chairman;* Dr. Joel Crawford (1); Dr. John A. Owen (3).

President Flippin: Announcement of the special committees will be made at an early date in the Monthly.

So far as I know, this completes the business, and a motion to adjourn is in order.

The Society then, at 5:56 P. M., adjourned *sine die.*

BUSINESS SESSIONS

Council

The Council of the Medical Society of Virginia met at the Richmond Academy of Medicine Building, Richmond, Virginia, November 1, 1932, at 11:00 A. M., with the president, Dr. I. C. Harrison, presiding.

Others present were Dr. J. Carroll Flippin, president-elect, Drs R. D. Bates, P. St. L. Moncure.

R. W. Miller, J. M. Shackelford, Percy Harris, J. E. Knight, C. B. Bowyer, and Miss Agnes V. Edwards, secretary.

Reading of the minutes of the last meeting was dispensed with as it was stated that these would be presented before the House of Delegates in the afternoon. Miss Edwards said that the only matter referred to in the minutes which had not been attended to was the re-incorporation of the Society. This was due to the fact that it was found to cost more than was first stated. After discussion, it was moved and carried that we pass over this for the present.

The budget as prepared by Dr. R. W. Miller, Dr. Wright Clarkson, and Miss Edwards was next discussed. Dr. Miller stated that cuts had been made in practically all items so as to have the recommendations for the ensuing year come within the amount collected during the past year. The figures included $25.00 for a renewal for one year of the fire insurance on the birthplace of Dr. Walter Reed, in Gloucester County, though statement had been received for $100.00 for five years. It was moved and carried that we renew the insurance for one year and decide at the winter meeting of the Council if this coverage should be reduced for the future. The items made a total of $4,075.00 for the Society, exclusive of the MONTHLY, a recommendation of $10,085.00 being made to cover expected expenses for that feature. It was moved and carried that the budget be recommended to the House of Delegates as well as a special appropriation of $448.30 to cover the cost of our new furniture and another special appropriation of $2,500.00 for a continuance of the Prenatal and Postnatal Instruction of our members for a second year, provided sufficient funds be appropriated by the Commonwealth Fund and other agencies to carry forward the work.

Drs. Miller and Clarkson were appointed by the president to confer in regard to reinvesting $4,000.00 of the Society's securities which mature this date.

The various councilors reported on the activities of the counties in their districts.

Dr. Moncure brought up the question of State and Federal medicine. Following a discussion, he offered the resolution that we recommend to the House of Delegates that some action be taken looking to correcting the practice of the encroachment of Federal and other agencies on private practice, pauperizing people well able to pay a physician. This is not to be construed as applying to any educational medicine as carried out by our two medical schools or the State Board of Health, or people who are indeed financially unable to pay anything.

There being no further business, the Council adjourned.

House of Delegates

The first meeting of the House of Delegates of the Medical Society of Virginia was held in the Richmond Academy of Medicine Building, Richmond, Virginia, November 1, 1932, at 4:00 P. M. The meeting was called to order by the president, Dr. I. C. Harrison, of Danville. Roll call showed considerably more than a quorum present.

It was moved, seconded, and carried that the minutes of the last annual meeting, as printed in the December, 1931, issue of the VIRGINIA MEDICAL MONTHLY, be approved.

The following report of the executive secretary-treasurer was read:

Report of Executive Secretary-Treasurer

TO THE PRESIDENT AND MEMBERS OF THE HOUSE OF DELEGATES:

At our 1931 meeting we reported a membership of 1854. Since then we have added fifty-one new members and lost a total of fifty-two, twenty-seven by death, fifteen by resignation, one by expulsion, and nine for non-payment and because they could not be traced. This makes a net loss of one or a total membership of 1853.

The Council and various committees have held meetings during the year and interest has been manifested in the Society's activities.

We have fifty-one component societies, representing 88 counties and the City of Alexandria. Some of these are inactive because of the small number of doctors in the counties which fact also explains the 12 unorganized counties. Practically all of the doctors in the unorganized counties and inactive societies, however, are affiliated with some district society or attend meetings in near-by counties.

A charter was issued the Lynchburg Academy of Medicine, Incorporated, in accordance with action of the Council, replacing the one formerly issued the Lynchburg and Campbell County Medical Society.

As ordered by the House of Delegates at our last meeting, a questionnaire was sent all members of the Society for an expression of opinion in regard to the Eighteenth Amendment to the Constitution of the United States. The money for this work was a donation. Results were tabulated in the January, 1932, issue of the MONTHLY.

Our Society was represented at the New Orleans meeting of the American Medical Association by Drs. Southgate Leigh and E. C. S. Taliaferro, regularly elected delegates, and Dr. Warren F. Draper, alternate for Dr. J. W. Preston. In accordance with instructions from the American Medical Association, we will not be permitted to have representation for Associate members who have moved from Virginia, so we will be entitled to only two delegates and two alternates for the coming year.

This Fall, we moved into our lovely new office in the Richmond Academy of Medicine Building and have re-furnished it that it may be in keeping with the rest of the building.

Dr. E. C. L. Miller, in charge of the Library of the Medical College of Virginia, very kindly agreed to store the medical books of our library and they are at present in stacks separate from those of the College.

In order to increase interest in the child work throughout the State, the president appointed Dr. F. D. Wilson, Norfolk, and Dr. A. T. Finch, Chase City, as additional members of the Child Welfare Committee. Dr. Tiffany J. Williams, University, was appointed a new member of the Maternal Welfare Committee. The president also appointed Dr. W. L. Powell, Roanoke, as chairman of the Committee on Group Societies, in place of Dr. Charles R. Grandy, deceased, and added Dr. W. L. Harris, Norfolk, to this Committee. Dr. Clarence Porter Jones, Newport News, was appointed chairman of the Walter Reed Commission, succeeding Dr. E. C. S. Taliaferro, deceased, with Dr. O. T. Amory, Newport News, as new member of this Committee.

In accordance with instructions of the House of Delegates, we have merged the money formerly segregated for Medical Defense with the general checking and savings accounts of the Society. The Auditor's report, showing receipts and disbursements in detail will appear with the minutes of the Society.

Our receipts for the year ending September 30, 1932, are $14,175.77 and disbursements for general expenses $14,525.94. Although we have expended $350.17 in excess of receipts, we have lived well within the budget which was planned before we anticipated so large a decrease in revenue. In addition to the disbursements given above, through September 30th, we paid $1,041.67 of the $2,500.00 appropriation authorized last year for Prenatal and Postnatal Instruction of members.

Quite a saving for the Society could be effected by the prompt payment of dues after the rendering of statements and we suggest that each member help as far as possible in this way.

We have accomplished a large amount of detail work in our offices and greatly appreciate the cooperation which has been given us.

AGNES V. EDWARDS,
Executive Secretary-Treasurer.

It was moved that this be received and filed. Seconded and carried.

Auditor's Report—October 1, 1931, through September 30, 1932

TO THE OFFICERS AND COUNCILORS, MEDICAL SOCIETY OF VIRGINIA,
RICHMOND, VIRGINIA.

GENTLEMEN:

We have made an examination of the books of account of the Medical Society of Virginia, Richmond, Virginia, for the fiscal year ended September 30, 1932, and submit herewith our report, consisting of the following financial statements and our comments thereon:

EXHIBITS
"A" Balance Sheet.
"B" Cash Receipts and Disbursements.

Comments

A summary of the financial condition of the Society at September 30, 1932, compared with a similar summary at September 30, 1931, shows:

	9-30-32	9-30 31	Decrease
Cash	$ 6,220.56	$ 7,612.40	$1,391.84
Accounts Receivable	3,730.86	2,830.63	900.23*
Investments (Bonds)	6,000.00	6,000.00	
	$15,951.42	$16,443.03	$ 491.61
Less: Accounts Payable	472 17	763.93	291.76
Net worth	$15,479.25	$15,679.10	$ 199.85

During the year under review the cash and securities of the Legal Defense Fund, amounting to $9,219.82, were merged with the General Fund, and they are so stated in this report.

A summary of the cash receipts and disbursements for the current and prior fiscal years is given below:

	Years Ended 9-30-32	9-30-31	Decrease
Cash Receipts	$14,175.77	$15,181.06	$1,005.29
Cash Disbursements	15,567.61	15,349.03	218.58*
Disbursements in Excess of Receipts	$ 1,391.84	$ 167.97	$1,223.87

*Increase.

The 1932 disbursements include a special appropriation of $1,041.67 to committee on Prenatal and Postnatal Instruction.

We checked in detail the cash receipts and disbursements of record and established by direct communication with the First & Merchants National Bank, Richmond, Virginia, the funds on deposit. Securities owned, as stated on the balance sheet, were inspected and the revenue from them was properly accounted for.

The amount owing by members for dues, and accounts due for advertising in and subscriptions to the MEDICAL MONTHLY, are shown at collectible values, as estimated by the Secretary-Treasurer. No attempt was made to verify these by direct communication with debtors. The Secretary-Treasurer advised that there were no outstanding liabilities at September 30, 1932, other than those shown on the balance sheet.

The Secretary-Treasurer is bonded in the sum of $3,000.00, and office equipment is insured against loss by fire for $1,000 00.

Respectfully submitted,

A. M. PULLEN & Co.,
Certified Public Accountants.

Balance Sheet—September 30, 1932

Exhibit "A"

ASSETS

CASH:		
On Deposit—First & Merchants Natl. Bank:		
Checking Account	$ 386.53	
Savings Account	5,834.03	
		$6,220.56
DUE FROM MEMBERS:		
(Estimated Collectible Value) 1932 Annual Dues—550 @ $5.00		2,750.00
ACCOUNTS RECEIVABLE:		
VIRGINIA MEDICAL MONTHLY:		
For Advertising	$ 920.86	
For Subscriptions	60.00	
		980.86
SECURITIES OWNED:		
First Mtg. 6% Note—Due 4-2-33	$1,000.00	
Coll. Trust 6% Bonds—Due 4-1-34	1,000.00	
Coll. Trust 5½% Bonds—Due 11-1-32	4,000.00	
		6,000.00
Total Assets		$15,951.42

LIABILITIES

ACCOUNTS PAYABLE:		
For Preparation of Medical Journal	$ 472.17	
SURPLUS:		
Excess of Assets over Liabilities	15,479.25	
Total Liabilities and Surplus		$15,951.42

Cash Receipts and Disbursements
For Fiscal Year Ended September 30, 1932
Exhibit "B"

RECEIPTS

MEDICAL SOCIETY OF VIRGINIA:		
Dues—Members	$4,032.82	
Interest on Bank Balance and Securities	279.42	
Miscellaneous Receipts	19.15	
Refund of Unused Appropriation by Dept. of Clinical Education (1931)	63.36	
		$4,394.75
VIRGINIA MEDICAL MONTHLY:		
Advertising	$6,452.89	
Subscriptions:		
Members $2,688.55		
Non-Members 353.91		
	3,042.46	
Interest on Bank Balance and Securities	279.42	
Miscellaneous Receipts	6.25	
		9,781.02
Total Receipts		$14,175.77
Balance on Deposit—October 1, 1931		7,612.40
Total Receipts and Balance		$21,788.17

DISBURSEMENTS

MEDICAL SOCIETY OF VIRGINIA:		
Salaries (Apportioned):		
Secretary-Treasurer $1,800.00		
Clerical Assistance 660.00		
	$2,460.00	
Rent, Fuel, Janitor and Telephone	286.61	
Stationery and Office Supplies	84.42	
Postage	269.28	
Reporting Annual Meeting	170.10	
Officers', Councilors' and Committeemen Expense	90.10	
Programs	75.00	
Repairs and Replacements—Office Equipt.	28.14	
Department of Clinical Education	163.21	
Committee on History of Medicine	600.00	
Committee on Scientific Work	87.15	
Committee on Child Welfare	3.72	
President's Expenses	25.65	
Audit Fee (Apportioned)	31.67	
Miscellaneous Expenses	15.14	
		$4,390.19
VIRGINIA MEDICAL MONTHLY:		
Salaries (Apportioned):		
Secretary-Treasurer $1,800.00		
Clerical Assistance 660.00		
	$2,460.00	
Preparation Journal (Including cost of distribution)	7,264.28	
Rent, Fuel, Janitor and Telephone	283.76	
Repairs and Replacements—Office Equipt.	28.12	
Stationery and Office Supplies	19.11	
Office Postage	34.50	
Audit Fee (Apportioned)	31.66	
Miscellaneous Expenses	14.32	
		10,135.75
Total Disbursements (Ordinary)		$14,525 94
SPECIAL APPROPRIATION:		
Committee on Prenatal and Postnatal Instruction (5 Months)	$5,661.67	
Less: From Commonwealth Fund	4,620.00	
		1,041.67
Total Disbursements		$15,567.61
Balance on Deposit—September 30, 1932		6,220.56
		$21,788.17

The report of the mid-winter meeting of the Council was then presented.

Mid-Year Meeting of Council

The Council of the Medical Society of Virginia held its mid-winter meeting in the Society's offices, 104½ West Grace Street, Richmond, on January 21, 1932, at 3:00 P. M.

Present: Dr. I. C. Harrison, President; Dr. J. C. Flippin, President-Elect; Drs. G. F. Simpson and Warren T. Vaughan, Vice-Presidents; Drs. R. D. Bates, P. St. L. Moncure, R. W. Miller, Wright Clarkson, J. M. Shackelford, J. R. Gorman, Percy Harris, J. E. Knight and J. M Emmett, Councilors; Miss Agnes V. Edwards, Executive Secretary-Treasurer; Drs. Warren F. Draper and B. B. Bagby, by invitation. Dr. C. B. Bowyer, of the Ninth District, wired that he was prevented at the last minute from attending.

Miss Edwards stated that the receipts and disbursements for the first three months of the financial year of the Society were about the same as last year, though there was likelihood that the receipts will be somewhat less on account of loss of advertising and delay in payment of dues.

The only committee to make a report was that on Group Societies. Its chairman, Dr. Charles R. Grandy, stated that the committee felt it would be unwise to take any action until the legislature had acted on our new Congressional Districts and, therefore, thought it better for the Committee to wait to report at the meeting of the Society in the Fall. Motion was made and carried that the Committee on Group Societies be asked to bring in a report in the Fall.

Each councilor, upon call, gave an account of component society activities in his district.

Dr. Gorman, councilor of the Sixth District, presented the following letter:

Lynchburg, Va.,
January 20, 1932.

To the Council of the Medical Society of Virginia, Richmond, Va.

Gentlemen:

The present membership of the Lynchburg and Campbell County Medical Society, after due consideration, has decided to surrender its present charter, and to apply to the Council of the Medical Society of Virginia for a new charter, under the name of Lynchburg Academy of Medicine, Incorporated. As the acting President of this contemplated new Society, I wish to make formal application for a charter.

Yours very truly,
D. P. Scott.

A motion was made that the surrender of the charter of the Lynchburg and Campbell County Medical Society be approved and another motion that a charter be granted to the Lynchburg Academy of Medicine, Incorporated. Both motions were duly seconded and carried.

Dr. Harrison stated that he had invited Dr. Warren F. Draper, State Health Commissioner, to attend this meeting, that he might present to the Council the outline of a plan the State Department of Health had prepared to present to the physicians of the State through the Medical Society of Virginia, whereby the resources of the State and local health agencies might be made available to aid the physicians in administering diphtheria immunization to a considerable proportion of the children of the State between the ages of six months and fifteen years. He stated that the need for some measure for curbing the spread of this disease was apparent, in view of the increased incidence of diphtheria in recent months. Dr. Draper then presented his paper, which he said was a suggestion that might lead to a joint program between the doctors of the State and the State Board of Health for diphtheria immunization and preschool clinics. Dr. Draper stated that it was the usual experience that such a plan increased the work of the private physician and, for its success, a price would have to be established for the work. It was distinctly understood that the compensation for the work done in each county should be fixed by the physicians cooperating in the campaign, the State Health Department furnishing the toxin antitoxin or toxoid at the stated cost of $.086 per complete immunization.

The plan was discussed and commended by all present, following which a motion was made and adopted that the Council endorses Dr. Draper's plan for diphtheria immunization clinics throughout the State and recommends the whole-hearted support of the Medical Society of Virginia in carrying out the project.

Dr. Harrison stated that he wished Dr. Draper's paper published in the next issue of the Monthly, with a statement as to the action taken by the Council. (This appears in the Miscellaneous Department of the March, 1932, issue of the Monthly—pages 817-819.)

The selection of the place for the 1933 annual meeting was the next matter to have attention. Invitations were received from the local societies, through their respective councilors, to hold the meeting in Richmond and in Lynchburg. Dr. Emmett also suggested Hot Springs, as he felt it might add to the interest of the meeting to have all members at the same hotel. The new Chamberlain Hotel, at Old Point Comfort, was also suggested. It was the opinion of the Council that entertainments should be eliminated. Upon vote, it was decided to hold the sixty-third annual meeting in Richmond, with the recommendation that the members of the Society should take care of themselves in the matter of entertainment. The selection of dates for the meeting was left to the local society.

Drs. Wright Clarkson and R. W. Miller, with the cooperation of the Executive Secretary, were appointed by the President to prepare a tentative budget for the succeeding year, same to be presented to the Council in the Fall.

The Secretary stated that she had made inquiry and found the Medical Society of Virginia was incorporated in 1871, but that no annual incorporation fee had been paid for a number of years. She was told that the incorporation might be renewed by paying $15.00 plus $5.00 for the current year. It was moved and carried that the Society should secure re-incorporation.

It was announced that work had been commenced on the Richmond Academy of Medicine Library building and the Secretary asked what should be done about taking offices in this building in accordance with resolution adopted by the Council several years ago. She stated that the rental stipulated at that time was about $125.00 in excess of what we are now paying. It was moved that we take quarters in the new building, and Dr. R. W. Miller, the local councilor, said he would see what could be done about the rent.

A motion presented at the last meeting of the House of Delegates that we publish a list of members of the Society was referred to the Council for action. It was moved and carried that we do not publish such a list at this time on account of the additional cost.

Dr. Harrison, the President, stated that the question had recently arisen as to the action of the House of Delegates on "the report of a committee" and, upon reference to the minutes, he found that a number of such reports had been ordered to be "received and filed" when he felt it was the sense of the House to endorse and carry on the work of certain committees. He hoped that this would be borne in mind at the next meeting and some definite action be taken in regard to reports when they seemed to require and deserve more than a mere filing.

Dr. Clarkson said that his Committee on Legislation and Public Health had approved a bill to be presented the State Legislature, creating and providing a lien in favor of hospitals furnishing care,

treatment and maintenance of persons injured in accidents. This was being sponsored by the Virginia Hospital Association, as many persons carried to hospitals following accidents have refused payment and such cases are becoming a burden to hospitals. Dr. Moncure recommended that the Council endorse the proposed law for the protection of hospitals.

Dr. B. B. Bagby, upon request of the president, explained certain matters in connection with his work in the Child Health Bureau.

There being no further business, the meeting adjourned.

AGNES V. EDWARDS,
Secretary.

It was moved, seconded and carried that this be received and filed.

The budget as approved by the Council at its morning session, next came up for discussion. The recommendation covered renewal of fire insurance on "Belroi," the birthplace of Dr. Walter Reed, for only one year. Dr. C. P. Jones, chairman of the Walter Reed Commission, stated that the reason they had suggested this renewal for a term of five years was because it would save the Society $25.00.

When it was stated that there was a reduction of $300.00 in the appropriation for the Committee on History of Medicine in Virginia, Dr. Wyndham Blanton, chairman, said they had contracted for an expert in research work for another year with the hope of completing the history, and to reduce the appropriation would mean that they would have to discontinue the work. It was explained that there was no wish to discontinue the work but that the Council had only suggested the reduction with the idea of living within expected income. Many complimentary remarks were made by those present as to the two volumes already published and it was moved and carried that the $600.00 appropriation be continued and that Dr. Blanton be given a rising vote of thanks for the excellent work accomplished.

Dr. T. H. Daniel then moved that the budget of the Medical Society of Virginia be adopted as amended. Seconded and carried.

The budget for the VIRGINIA MEDICAL MONTHLY was adopted as presented, as also the special appropriation for the new furniture in the Society's office.

In explanation of the special appropriation for the continuation of prenatal and postnatal instruction, Dr. J. Carroll Flippin, chairman, read the report of the Department of Clinical Education and asked Dr. Lee E. Sutton to present the part referring to the work of the Joint Committee on Prenatal and Postnatal Instruction.

Report of Department of Clinical Education

It is my duty and pleasure to report to you the activities of the Department of Clinical Education during the third year of its life. The Chairman does not consider it necessary to make a lengthy or detailed report at this time as the activities of the Department have been reported very fully during the year in the MEDICAL MONTHLY, and there is herein incorporated a report of the Joint Committee on Prenatal and Postnatal Instruction of the Department by Dr. Sutton, the Chairman of that Committee.

During the past year the major effort of the Department has been in the field of Prenatal and Postnatal Instruction, which will be referred to later in this report. Otherwise the work of the Department of Clinical Education has been carried forward along the general lines pursued during the past two years, the general object being to stimulate and facilitate continued medical education among members of the Society.

In order that the problem of the Committee be more clearly defined, in the fall of 1931 a questionnaire was sent out by the Executive Secretary to officers of all societies listed as organized in the State by the Secretary of the Medical Society of Virginia. As stated in his report, the purpose of the inquiry was to discover what societies functioned as educational agencies and the methods by which this Department could be of service to them. It was plain from the replies received that most of the local societies in the State are too weak in membership and resources to do more than maintain a formal organization. Some of the stronger societies, those in centers of large population, are very active and will continue to function without outside aid. Other societies, either because of remote location or ineffective organization, are in position to take advantage of help such as can be furnished at present by this Department. Contact is being made with certain of the smaller societies referred to in the first group by the field workers in Prenatal and Postnatal instruction and it seems probable that some such plan as this will be required in future to bring instruction to members of these societies.

During the year a list was prepared and published, giving the names of more than sixty men who are available for addresses and clinics when called on by local organizations. A general invitation was extended to all physicians in the State in making up this list.

The report of the Joint Committee on Prenatal and Postnatal Instruction of the Department of Clinical Education as submitted by the Chairman, Dr. Lee E. Sutton, is as follows:

"At the meeting of the House of Delegates held in Roanoke, October 7, 1931, it was voted that $2,500.00 be appropriated to the Department of Clinical Education of the Medical Society of Virginia for the organization of courses on Prenatal and Postnatal care to be given the physicians of the State of Virginia through a joint committee appointed for this purpose.

The Commonwealth Fund of New York added to this sum of $2,500.00 from the Medical Society of Virginia an appropriation of $10,000.00 for the first year's effort in this direction. This gave to the committee a budget of $12,500.00 for the first year's operation.

The following is the personnel of the Joint Committee on Prenatal and Postnatal Instruction:

Dr. I. C. Harrison, Danville, Va., President, Medical Society of Virginia.

Dr. J. Allison Hodges, Richmond, Va., Ex-President, Medical Society of Virginia, and Department of Clinical Education.

Dr. J. C. Flippin, University of Virginia, President-Elect, Medical Society of Virginia.

Dr. Manfred Call, Medical College of Virginia and Department of Clinical Education.

Dr. H. S. Daniel, Louisa, Va., Department of Clinical Education.

Dr. R. A. Moore, Farmville, Va., Department of Clinical Education.

Dr. L. T. Royster, University of Virginia and Department of Clinical Education.

Dr. Lee E. Sutton, Jr., Medical College of Virginia, Chairman.

Mr. Geo. W. Eutsler, Secretary, Department of Clinical Education.

Dr. Maxwell E. Lapham was selected for the position of Field Clinician after an intensive search for the best trained instructor available.

The University of Virginia Extension Division is the executive agency of the Joint Committee. It is charged with the responsibility of organizing and administering classes for instruction under the definite requirement that a class is to be formed in a community only after the project has been endorsed by the local profession.

Courses were arranged through the efforts of Mr. Zehmer and Mr. Eutsler of the Extension Division of the University of Virginia for Dr. Lapham of ten weekly meetings, each approximating two hours in length, the first hour for lecture, and the second for clinical demonstrations and round table discussions.

Members of the groups taking the course were invited to cooperate by providing patients for clinical material. The field clinician devoted out-of-class hours in consultations and in examining patients at the office of the physicians only upon request of the physicians. As this consultation service was limited to educational purposes, it was done without cost.

The appended tabulation gives the various circuits, with report of attendance and comments from the attending physicians.

FINANCIAL STATEMENT

	Annual Budget	Expenditures 6 months
Travel and salary of field clinician	$7,000.00	$3,500.04
Instructional aids (Secretary, transportation of patients, etc.)	2,000.00	150.43
Office and staff assistants (Extension Division of the University of Virginia)	2,300.00	1,146.67
Travel for organizing classes (Mr. Zehmer and Mr. Eutsler)	500.00	326.74
Supplies, postage and communication	500.00	533.11
Reserve fund	200.00	------
	$12,500.00	$5,656.99

RECEIPTS

Commonwealth Fund	$5,000.00
Medical Society of Virginia	1,250.00
Enrollment fees at $5.00 per member	755.00
Total	$7,005.00

Estimating the success of the courses given within the first six months' period by the response of the physicians attending them, the Joint Committee is quite enthusiastic and pleased over the results obtained. It feels that the program has amply justified its continuance.

It was resolved, therefore, by the Joint Committee that the House of Delegates be asked to support the Prenatal and Postnatal Instruction program for another year predicated upon the Medical Society of Virginia continuing its appropriation of $2,500.00 in order to obtain a tentative allotment of $5,000.00 from the Commonwealth Fund for the second year. The Joint Committee feels that the above sums, added to a fee of $5.00 collected from each one taking the course, will be adequate to continue a further tentative program for another year without disadvantage to the work."

Although at the cost of some repetition, I wish to state that it is the opinion of the members of the Department of Clinical Education that in securing the services of Dr. Lapham we were fortunate in the choice of a man to take charge of this work. Many of the anticipated difficulties have been met more easily and more successfully than could have been expected. The attendance upon the classes has been generally good and satisfaction has been expressed in most quarters as to the character of the work. As Dr. Lapham and the Committee gain experience it is believed that the work will be correspondingly improved. In short, we consider it a success and recommend to the Society that arrangements be made by which this work can be carried forward for a second year beginning May 1, 1933.

Interest has already begun to be shown and inquiries are being made by physicians of the State as to the next educational problem that should be undertaken after the completion of the work in Prenatal and Postnatal care. It is believed that the incoming committee should give thought to this problem during the coming year and be ready with suggestions for ways and means at the next meeting of the Society.

As the retiring chairman of this committee, I wish to express myself as being in agreement with my predecessors of the past several years in the belief that continuous education of the practicing physician is one of the major problems of medical education and of medical practice and the Medical Society of Virginia exhibited great wisdom in definitely committing itself to a constructive program in this field. Thus far the program has more than justified itself and the work should be advanced with increasing strength and zeal.

J. C. FLIPPIN,
Chairman.

After endorsement of this work by several doctors, motion was made by Dr. C. P. Jones that the special appropriation of $2,500.00 be continued for prenatal and postnatal instruction in accordance with the above report. Seconded and carried.

Recess was taken at this time for the selection of a nominating committee. The members of the committee, as reported from the various districts, were:

1st District—Dr. R. R. Hoskins.
2nd District—Dr. W. B. Martin.
3rd District—Dr. J. M. Hutcheson.
4th District—Dr. W. W. Wilkinson.
5th District—Dr. P. W. Miles.
6th District—Dr. H. B. Spencer.
7th District—Dr. T. H. Daniel.
8th District—Dr. C. A. Ransom.
9th District—Dr. Isaac Peirce.
10th District—Dr. J. E. Womack.

This committee was asked to present their nominations for officers of the Society at the meeting to be held on Wednesday.

Report of Membership Committee

Dr. J. A. White, chairman, stated that while membership in the State Society is dependent upon mem-

bership in one's component society, there are still some counties in our State which have no component organization on account of the small number of doctors in those sections. He presented application for membership from Dr. Lewis Holladay, assistant physician at State Farm, Virginia. He stated that as he was well endorsed and living in a county in which there was no society, he would like to move that he be admitted to membership. This was seconded and carried.

Dr. White then presented an application from Dr. Ward C. Curtis, who stated that he had applied for membership in the Fauquier County Medical Society but had not been admitted as a member. After discussion, it was moved that the matter be referred to the Ethics and Judiciary Committee for advice as to the proper procedure in this matter. Seconded and carried.

Dr. White then nominated Dr. Harrison, the retiring president, for honorary membership. This was seconded and carried by a rising vote.

Dr. White said that he would give the names of the twenty-seven members whose deaths had been reported during the year at Memorial Hour, before the general session of the Society that evening.

Dr. Southgate Leigh, senior delegate, presented the following joint report by himself and Dr. Warren F. Draper and stated that this was really a message from the American Medical Association and it was earnestly hoped that every doctor in Virginia would read it:

Report of Delegates to the American Medical Association

During the sessions of the House of Delegates, two overshadowing matters were constantly in the minds of the Delegates.

First, the general business depression and its effect on organized medicine, and second the growing tendency toward State Medicine and especially the attitude of the Government in regard to hospitalization of Veterans.

Notwithstanding the hard times the attendance of Delegates and of Fellows was remarkably good, the Scientific Exhibits were of a high order and the educational meetings successful.

In the report of the Judicial Council we find the following:

"The tendency toward radical change in the relations of physicians and medical societies toward the public, as well as signs of change in the relations of physicians toward one another, has been clearly reflected in a constantly growing stream of inquiries addressed to the Judicial Council during the year covered by this report. It is probable that in many instances these inquires have grown out of conditions resulting from the widespread financial depression, which has borne heavily on physicians and all the institutions with which they are most directly concerned. There was, however, abundant evidence before the development of the present economic crisis that many forces were pressing for the adoption of new methods of medical practice and for changes in the relation of physicians, as individuals and as organized groups, toward the public and toward institutions and organizations, and also for revolutionary changes in the very traditions of the profession with respect to the obligations and privileges of physicians in their contacts one with another. These forces have in some instances been sadly misdirected and will result in disaster to medicine and to the public. In other instances they have instituted movements designed to secure adjustments, based on the results of careful and critical study, that may insure the extension of medical service and increase its efficiency. . . . . .

"The complexities of modern society may make it imperative that some changes shall be made, but the duty of the organized profession is to see to it that any and all proposals for change, from whatever source, shall be scrupulously and deliberately examined with the view of determining their ultimate value. Decisions should not be made on the basis of feasibility for the immediate present but should be made in the light of the experience of the profession, the nature of its service, the imperative need for maintaining professionalism and the absolute necessity for unhampered scientific advancement, and with the utmost regard for the best interests of the people."

Throughout the meetings there was shown a spirit of conservatism, of a desire to uphold the ethics and best traditions of the profession, and avoid all tendencies to radicalism.

For instance the Council, notwithstanding many suggestions to the contrary, ruled against any change in the attitude of the organization towards the granting of patents to physicians.

Speaker Warnshuis advised as follows:

"Times change and we must change with them. The sincere student recognizes that we are at present in the vortex of readjustment along every avenue of human endeavor. New professional and public relationships are being formulated and instituted. You who represent and speak for the entire profession of scientific medicine are intimately concerned. On you who constitute this House of Delegates rests the tremendous responsibility of molding and guiding public opinion and formulating the fundamental principles that will bring about acceptable readjustments wherein all the traditions and achievements of the medical profession will be conserved and its relationship to patient and public enhanced."

He also advised as follows regarding reports of Delegates:

"On several previous occasions it has been recommended that delegates complete the discharge of their responsibilities and duties by rendering to their respective state organizations a detailed and explanatory report of activities of this House. This is most essential and quite desirable. State organizations stand in need of and are entitled to that information. They need to know the detailed action of this House for guidance in the administration of state organizational affairs. National unity is unattainable without such instructive and guiding knowledge . . . . . ."

And later the Delegates adopted unanimously a resolution as follows:

"WHEREAS, The profession is confronted with difficulties that are both serious and urgent; and

WHEREAS, There is pressing need for close and active cooperation on the part of all component societies, as well as the individual doctors; and

WHEREAS, With such earnest cooperation many problems may be readily solved; therefore, be it

RESOLVED, By the House of Delegates of the American Medical Association that the officers and trustees of the Association be instructed to communicate with the various constituent state societies, advising them of the difficulties and suggesting that they take the following steps:

1. To keep in close touch with the national organization.
2. To strengthen the county society units, and as far as possible to arrange for an organization in each county in the state.
3. To continue with renewed energy the work of the various public relation committees in states and counties; and

RESOLVED, That the delegates from each state society present this matter vigorously and promptly to their respective organizations; and further

RESOLVED, That the officers and trustees communicate with the Woman's Auxiliary to the American Medical Association, requesting its continued active cooperation with the profession and urging that local auxiliaries be formed in connection with every county society."

And from President Judd we quote as follows:

"The functions of members of the medical profession are, first, to advise, treat and care for those who are in need of their services; second, to plan and direct programs of preventive medicine and public health; and third, to protect the public in every manner possible against the activities of insufficiently educated or dishonest practitioners: . . . . . .

"The profession is constantly confronted with the problem as to what is the best plan for giving adequate medical service to all of the people at all times. I think it can be said that, as a rule, the service as now furnished to society is satisfactory and adequate. Suggestions for new methods of practice are constantly being made. Many of these suggestions have to do with the economics of the practice of medicine. . . . . .

"Protecting society from the irregular practices of medicine is one of the most important functions of the Association. . . . . .

"Irregular practices cannot be eliminated, but they can be reduced to a minimum. . . . . .

"Specialization has been greatly overdone and not only is responsible for less satisfactory results but also has a tendency to increase the cost. I believe the best specialists will be those who have spent some time in general practice. . . . . .

"One of the duties of organized medicine is to make it possible for society in general, as well as the medical profession, to find out who are qualified specialists in the various fields. Furthermore, I believe that there is nothing more important than the regulation of specialization and the proper qualification of specialists at the present time."

The second serious situation, the tendency towards State Medicine, received a great deal of attention.

Strenuous efforts had been made during the year by various officers and Committees to defeat attempts of Government Agencies and Congress to restore the iniquitous Sheppard-Towner Act, to foster government care of children, and especially to educate the Veterans as to the unwisdom of being cared for in Government Hospitals.

The building of more such hospitals was protested as uneconomical and a great injury to civilian hospitals.

President Judd spoke vigorously on the subject as follows:

"One of the most important problems before society and the medical profession is the one dealing with the best plan for care of war veterans. Some of these men are sick and must be cared for. The medical profession is willing and anxious to see that the best medical attention possible is provided for them. It wants them to have exactly the same care that all other orders of society are given. It does not want them to be pauperized and to be placed in hospitals when they are not sick. It seems to me that the Federal Government has built enough hospitals. There are many unoccupied beds in civilian hospitals that might well be used in the care of veterans who are sick."

A Committee appointed at a previous session accomplished a good deal in changing public sentiment and urging upon the veterans to favor a form of sickness insurance under which the patients may select their own doctors and own hospitals in place of the present plan of treatment at Government Hospitals for diseases and injuries having no connection with war service.

At this session the matter was gone into very fully by two special Committees and plans for action submitted.

It seemed hopeful that a change for the better would be developed, but that in order to bring it about, each State must do its part.

It becomes our duty as your Delegates to urge upon you the gravity of the situation and the vital necessity of vigorous work on the part of our State Committee on Public Relations, than which there is no more important Committee in our State Society.

It is the earnest wish of the American Medical Association that this Committee shall impress upon the profession of the State the impending danger of State Medicine (which already has a hold on this country through the Veterans Health Bill), to get the active cooperation of the County Societies, each of which should have a similar Committee, and to keep in close touch and cooperation with the A. M. A. Committee in charge of this movement.

Within the past few months the sentiment of the people of this country has undergone a great change, especially towards the Veterans, and during the year, well directed efforts will have a much better chance for success.

The Veterans Bureau Report showed that during 1931, 76 per cent of patients admitted to hospitals were suffering with diseases or injuries not traceable to War Service!

Among other matters of interest considered briefly by the House are the following:

The income of the Association has held up well, and its activities have not been interfered with.

Larger quarters are urgently needed.

Membership and Fellowship have remained about as before, the former around 100,000.

Hygeia is still successful both by its influence on the public and its finances.

The interest in periodical health examinations is increasing.

Birth Control was discussed and action deferred.

The Council on Medical Education and Hospitals was instructed to give all possible assistance to small hospitals so that the standards may be raised and efficiency improved.

The House of Delegates transacted a very large amount of important business, with meetings on Monday morning, Tuesday morning and afternoon and Thursday afternoon.

It is with deep sorrow that we record the untimely death of one of our Delegates, Dr. E. C. S. Taliaferro, who was in active attendance on all of the meetings of the House of Delegates. Dr. Taliaferro was a strong friend and earnest advocate of organized medicine, and was active in his local

society as well as in the various higher organizations, always standing firmly for everything that is highest and best in the profession.

Respectfully,
SOUTHGATE LEIGH,
WARREN F. DRAPER,
Delegates.

Dr. Moncure moved that this report be received and filed. Seconded and carried.

The chairman appointed Drs. P. St. L. Moncure and J. W. Preston to look over some correspondence with a view to making recommendations about it at the meeting on the next day.

Dr. G. F. Simpson asked was it not parlimentary to adopt a report rather than just receive it. Dr. Moncure then made a blanket motion that we adopt all reports thus far presented that had not been adopted. Seconded and carried.

Dr. Clarence Porter Jones, in presenting the report of the Walter Reed Memorial Commission, said he would like for all of the doctors to visit this shrine at their convenience and he wanted them to go home and make talks on Walter Reed before their schools, churches, and clubs.

Report of the Walter Reed Memorial Commission

The Walter Reed Memorial Commission begs leave to report that Belroi, the home of Walter Reed, is in good condition, is open to the public at all times of the day, and is being visited by many people from many climes. There are no debts or bills unpaid, there is a very small amount in hand. The only emergency which is now staring us in the face is that the insurance on the building will shortly expire. The premium on the same for five years is one hundred dollars—insurance for twenty-five hundred dollars We ask the Society to appropriate the amount of one hundred dollars to pay for this renewal.

What's back of the Walter Reed Memorial? the writer has been asked. First, to do honor to a great military hero—the first one who achieved fame for saving life! Second, to encourage research. Research is necessary for the world's progress. There is no better way to encourage research than to tell the story of Walter Reed. The Commission is determined that it shall be told in every schoolroom in America. It will kindle the young hearts with fiery zeal to do something for humanity which will bring forth a thousandfold.

Walter Reed became great for doing the simpler things and became famous for doing spectacular things: his promulgation of simple health truths on the one hand, and the control of typhoid and his eradication of yellow fever on the other hand. The Great Physician said, "I am among you as he that serveth." Since the world began, men have become famous for their military achievements, for their oratory, for their wit, for their literary attainments, for their political triumphs, for their inventive genius, and for various other accomplishments, but the men and the women who are most affectionately remembered are those who rendered service for the sake of serving; who have consecrated their talents, their endeavors, sometimes their lives to some cause, or some discovery for the good of mankind, in the spirit of unselfishness and with no thought of gaining fame or pecuniary emolument.

Such a man was Walter Reed. No man in all the world has rendered a more valuable service, and no man has rendered service in a more noble spirit and sacrifice. He was born in the humble house in Gloucester County, Virginia, which was dedicated as a shrine to commemorate the life and the service of the man. And in all the world that little house and the man who was born therein are held in sacred reverence. There are others who share honors with Dr. Reed—the twenty-five "immortals," who offered their bodies for experimental research in the yellow fever study, including Carroll, Lazear, Cooke, Kissinger, Moran and Miss Maass, soldiers, a civilian, Spaniards and an Englishman; also Agramonte, Gorgas, Guiteras and Kean, who rendered material assistance. Dr. Lazear and Miss Maass died, as well as two Spaniards.

America has no roll of honor more noble and every name should live in history with the name of Walter Reed.

The birthplace of Walter Reed has been preserved as a Shrine. Westmoreland has its Wakefield, Albemarle its Monticello, and Gloucester its Belroi!

Our hearts are saddened at the passing of our beloved Dr. E. C. S. Taliaferro, who gave much of his time and talents to the furtherance of this great memorial. Dr. Taliaferro worked in season and out for this noble cause. We very keenly feel this loss.

CLARENCE PORTER JONES,
Chairman.

It was moved that this report be received and filed.

Dr. W. O. Bailey said that he would have a statement to make from the rural practitioners at the meeting of the House on the next day, as he had been appointed spokesman by the Eighth District.

Dr. A. G. Brown, Jr., as chairman, presented the following report:

Report of Publication and Program Committee

The Publication and Program Committee has held two meetings during the past year. The first meeting was held in this city in the Spring. In attendance upon that meeting were Drs. Harrison, president, Flippin, president-elect, Neff and A. G. Brown, Jr. The business of selecting a subject for the symposium for this session and the selection of the members to discuss the selected subject was transacted. Routine matters incident to the publication of the VIRGINIA MEDICAL MONTHLY were considered.

The second meeting was held on September 13th. There were present Drs. Harrison, of Danville, president, Payne of Norfolk, Neff of Charlottesville, and Brown of Richmond. Dr. Flippin, owing to an acute illness, was unable to be present. Besides the committee, members of the Richmond Academy were present in order to assist in arranging details of clinics and other matters incident to the meeting of the Society.

The chief business before the committee was the preparation of the program of the scientific sessions. In response to the announcements previously sent by the secretary to the membership, that in preparation of the program for the meeting, any member desiring to present a paper should send in title of such paper with an abstract, the committee received sixty titles of papers with abstracts. This brought the committee face to face with a proposition of policy, which had for some years been under debate, as to whether or not to reduce the number of papers to be read to a limit that would be conducive to

best interests of the scientific sessions. With a purpose to correct criticism and dissatisfaction occasioned by an overcrowded program, and acting under instructions by resolution adopted by the House of Delegates at the last annual session, the committee, by unanimous action, finally determined to limit the number of papers to be read at this meeting to thirty, including those of the symposium. It was necessary, therefore, for the committee to decline half of the offered papers. This was an unpleasant duty but performed to the best of its ability. The committee endeavored to select the papers that appeared to offer subjects most fruitful of discussion and of practical value to the members.

The committee feels that an alternative plan may be employed by which sixty or more papers may be read at an annual session. That plan is to divide into two or more sections and to have the sectional meetings simultaneously with a possible joint meeting of two or all sections at one of the morning, afternoon or night sessions on Wednesday or Thursday.

The committee makes this rather detailed report to you in order to give you a glimpse of the difficulties. The House of Delegates will doubtless express its wishes as to a future policy However, the committee feels, after canvassing the whole question, that the limited program as attempted this year offers the prospect of the best results.

Respectfully submitted,

ALEXANDER G. BROWN, JR.,
Chairman.

Dr. Moncure moved that this report be adopted. Seconded and carried.

Dr. W. W. Wilkinson said that some years ago the program was divided into two sections and he moved that the next session be so divided, with sections on surgery and general practice. This was seconded, but as Dr. W. O. Bailey started to speak to the question, Dr. T. H. Daniel made a motion of adjournment. This was seconded and carried, and the meeting adjourned about 6:30, to meet on Wednesday, at 3:00 P. M.

November 2, 1932

The House of Delegates convened on Wednesday at 3:15 P. M., with the President, Dr. I. C. Harrison, presiding. A quorum being present, reports of committees were called for.

Dr. Wright Clarkson, chairman, presented the following:

Report of Committee on Legislation and Public Health

TO THE HOUSE OF DELEGATES, MEDICAL SOCIETY OF VIRGINIA:

Your Committee on Legislation and Public Health wishes to submit the following report:

The Committee was kept very active before and during the last meeting of the State Legislature. We reviewed carefully every proposed "Act" that had any relationship whatever to the sciences of medicine and public health and safeguarded against the adoption of anything that would be, in any way, detrimental to our profession.

We took an active part in the adoption of several laws which we thought were for the benefit of the profession. Among these was that part of the motor vehicle law which provided that an individual should satisfy all claims resulting from an automobile accident for which he was liable before being permitted to renew his license.

Another very important "Act" of Legislature, copies of which we circulated, and which we assisted greatly in the adoption of, was an "Act" sponsored by the Virginia Hospital Association under the head of "A bill to create and provide a lien in favor of hospitals furnishing care, treatment and maintenance of persons injured in accidents."

Your committee was pleased at the passage of a law providing that the State Health Commissioner must be a physician, and supported Dr. Stephenson who introduced a Bill at the direction of the State Board of Medical Examiners, whereby certain minor changes were made in this law.

Proposed Bills relative to the Virginia Barber License and certain changes in the Narcotic Law were thought to be erroneous. The former was handled through Dr. Draper, State Health Commissioner and after much consultation the sponsors of the latter Bill decided not to introduce it.

Following the enactment by the State Legislature of a law reducing the number of Congressional Districts in the State, your Chairman appealed to the Attorney General for a decision relative to whether or not this would immediately affect the number of members on the State Board of Medical Examiners, and received from the Attorney General a decision that it would not, since each of these members had already been appointed by the Governor, but that it would affect their future appointments provided the "Act" is put into effect.

Numerous communications were received from Dr. William C. Woodward, Director of the Bureau of Legal Medicine and Legislation, of the American Medical Association, and each was carefully considered, the president of the society being called in consultation on several of these subjects; however, none of the communications so far received have called for any definite action that would, in any way, affect the society.

A communication was received from Dr. E. Pendleton Tompkins, of Lexington, Va., complaining of the low fees paid physicians in attendance at city jails in the State and requesting a change in the law. Dr. Tompkins was advised to bring this matter before the House of Delegates since the communication was not received until February, and it was then too late to draft a law relative to this and, furthermore, we did not wish to take such responsibility without instructions to do so from the House of Delegates.

The Committee also acknowledged receipt of a letter from Dr. Percy Harris, enclosing letters from Dr. Archer and Mr. Hopkinson, president of the Charlottesville Bureau of Credits. This communication was also received late in February. The gentlemen desired a change in the present Virginia law covering Homestead Exemptions, calling attention to the fact that doctors, registered nurses and hospitals are not given the same protection in this law as are laborers and practicing attorneys.

In view of the law spoken of above protecting hospitals and physicians we feel that this matter has been, to some extent, corrected, but your Committee would like to have instructions from the House of Delegates as to what course, if any, you wish us to pursue.

Relative to a recommendation by Dr. W. B. McIlwaine, of Petersburg, for the appointment of a pediatrician on the State Board of Medical Examiners, a consultation was held with several officials of the State and it was definitely established that no appointments could be made at this time and it was deemed wise not to consider this matter again until the terms of the present examiners expire.

A careful analysis was made of the report from the Southwestern Virginia Medical Society in regard to revoking or suspending licenses of physicians. It

was found impossible to enact any legislation whatever during this year which carried with it any additional expenditure, and since the resolutions called for the Board to summon witnesses, administer oaths, to meet the expenses of legal advice and stenographic services, those members of the legislature which were approached relative to this said it would be useless to attempt such legislation at this time, but your committee is continuing its investigation of these matters in hope of clarifying this situation at some future date.

Respectfully submitted,

WRIGHT CLARKSON, *Chairman*,
B. B. BAGBY,
JOHN W. ROBERTSON.

Dr. Moncure moved that this report be adopted. Seconded and carried.

In the absence of its chairman, Dr. John O. Boyd, Dr. M. H. Harris, a member of the committee, was asked to present the report for his committee.

Report of the Medical Economics Committee

MR. PRESIDENT AND MEMBERS OF THE HOUSE OF DELEGATES:

The Medical Economics Committee has had very few activities during the year.

Attention was called to members of the Society to changes in the automobile laws. Particular attention was called to the revocation of the owner's license and permit to drive, should an unpaid judgment be held against him in any state.

We also called attention to the advantage of automobile insurance for our members, particularly to those taking out their policy through the Society, thereby saving about twenty-five per cent, which is remitted in the form of a dividend.

We have heard of very few actions against members for malpractice, but urge the members to take out liability insurance. The advantage to members of carrying protection in the same company is a smaller rate after the number of policyholders reaches one thousand.

Respectfully submitted,

JOHN O. BOYD, *Chairman*,
M. H. HARRIS,
ERNEST G. SCOTT.

Dr. W. B. Martin moved that this report be approved. Seconded and carried.

Dr J. W. Preston, chairman, gave the following report:

Report of Committee on Medical Education and Hospitals

While little has transpired since your body last met that would seem to your committee to demand specific action upon your part, a brief summary of matters pertaining to hospitals and medical education is believed to be worth while.

HOSPITALS

It is a pleasure to report, despite the fact that the hospitals throughout our State as elsewhere are struggling to meet an unprecedented strain incident to diminished revenues and increased number of indigent patients, a high standard of service is being maintained as is evidenced by the recent report of the College of Surgeons.

Among the hospitals in the State approved by the College of Surgeons there are also seven, not including the naval and marine hospitals, recognized by the American Medical Association as teaching hospitals for interns. Manifestly these institutions with approved ratings are in a much more favorable position to obtain the better classes of graduates as interns. Moreover, it is generally conceded that the arranging of programs, as is required in meeting a proper standard, is stimulating and helpful to members of the staffs as well as to visiting physicians. May it not be suggested that an effort be made to add to the number already approved?

Your committee wishes particularly to commend the cordial cooperation universally extended by hospitals throughout the State in the matter of affording meeting places for the members of the medical profession and opportunities for observation and discussion of clinical cases, both of which are important factors in the advancement of medicine in general. Your committee also wishes to express the hope and confidence that the Veterans Hospitals, which are at present being established throughout the country, will be wisely administered and will not operate to the detriment of hospitals dependent upon neighboring communities for support.

MEDICAL EDUCATION IN VIRGINIA

It is a source of gratification to those interested to know that the two schools of our State are steadily advancing in facilities for teaching and in scholarship. As an evidence of this we would call attention both to the increase in number of scientific articles offered by the members of the faculties of the two schools and likewise to the averages of grades made by the graduates of our schools before the Examining Boards throughout the country. It is notable that while the average number of failures of students of all schools taking examinations throughout the United States during the past year was 3.2 per cent, that from the Virginia Schools was less than 1.3 per cent.

Much credit should also be given both schools for their hearty cooperation in the matter of post-graduate clinical education. The courses offered by each are growing yearly in interest and usefulness and the number of practitioners availing themselves of the opportunity of attending is steadily increasing. Your committee wishes particularly to stress the fact that the stimulation which these courses are giving to the matter of clinical education in the State cannot be overestimated.

CLINICAL EDUCATION

The thanks of the entire society is due to the committee upon Prenatal and Postnatal Care for its untiring work during the past year. Thanks are also particularly due to the donors of the Commonwealth Fund, through whose generosity the funds of the State Society have been supplemented, making the course possible. The accomplishment of the committee in bringing systematic, organized, didactic instruction to the general practitioner in his own community, and when so desired in his own office, is the first opportunity of like character offered by the Medical Society of Virginia. The plan is concrete and practical and is affording at very little expense facilities otherwise available only in a few post-graduate centers, the attendance upon which entails the loss of much time, not to mention the considerable financial outlay. Since this is in a sense an experiment it remains to be seen whether or not the opportunity afforded at so little cost to the individual will prove to be as much appreciated as if it carried with it absence from home and a proportionate expenditure.

The excellent programs now offered by the component societies in most sections of the State, in some cases semi-annually, is worthy of more than passing note. These are steadily developing to fill an important place in an educational way. In this connection, in consideration of the fact that the majority of these programs feature one or more clinicians of broad experience, many of whom are teachers of medicine, may it not be inquired if it might not with advantage be made a more universal custom that the office of the Secretary of Clinical Education be authorized to send out postcard invitations to members of the State Society residing in the adjoining councilor districts, or at least to those resident in the counties immediately adjoining the councilor district in which the meetings may be held? Would this not prove a stimulus to those in the adjoining districts to maintain their standards of work, even though attendance from a distance might be somewhat limited?

MEDICAL EDUCATION IN RELATION TO ECONOMICS

As relates to the future of medical education and of medical practice in United States it is notable that since 1922, within which year there were 2,529 graduates, the number has steadily increased until 1931 showed 4,500, an average increase of 219 graduates yearly. It is further estimated that the number of physicians graduating this year will exceed the deaths of physicians by fifty per cent; likewise it is of note that about fifty per cent of medical students at present are preparing themselves for specialties. By and large there are more entrance applications of students of medicine than the colleges of the United States can accommodate, resulting in an overflow to foreign countries. The outcome of these facts can only be conjectured.

In conclusion, it is proper that your committee pass on to you two observations brought to its attention. The one that there is a question in some localities of the State as to whether applicants for charity at the hands of hospitals and practitioners have been sufficiently investigated, by capable individuals, prior to certification. The other, the fact that no opportunity for training in the rudiments of medical economics is at present afforded students by our medical colleges.

Signed: J. W. PRESTON, *Chairman*,
P. ST. L. MONCURE,
W. O. BAILEY.

It was moved and seconded that this report be adopted. Carried.

Dr. Joseph D. Collins then offered the following motion: Resolved, that the Medical Society of Virginia is opposed to the building of new veterans' hospitals by the Federal Government and that it urges that civilian hospitals be used for this purpose. This motion was seconded and carried.

Dr. Greer Baughman, chairman, being absent, Dr. P. W. Miles presented the report from their committee as follows:

Report of Committee on Maternal Welfare

TO THE HOUSE OF DELEGATES, MEDICAL SOCIETY OF VIRGINIA:

The Committee on Maternal Welfare, consisting of Dr. Greer Baughman, Richmond; Dr. P. W. Miles, Danville; Dr. W. R. Payne, Newport News; Dr. F. O. Plunkett, Lynchburg, and Dr. Tiffany J. Williams, University, wish to make the following report:

The committee met for organization in Richmond, Va., December 13, 1931.

In addition to the committee, Dr. Warren F. Draper, State Health Commissioner, Dr. B. B. Bagby, Dr. W. A. Plecker, and Mrs. Emily W. Bennett, all from the State Department of Health, were present by invitation.

The midwife situation was discussed and the following resolution was adopted:

RESOLVED, That every new midwife be indorsed by at least one physician before she be given a certificate by the local registrar to practice midwifery in the State of Virginia.

It was suggested that Dr. Plecker send to each local registrar a letter embodying this resolution. This has been done.

It was further decided that a letter be sent by the committee to every doctor in the State indicating the viewpoint of the committee on the midwife situation and enclosing a copy of the bulletin, Prenatal Care. This has been done.

The committee this year has seen the consummation of its vision in the employment of Dr. Maxwell E. Lapham, Field Clinician of the Joint Committee on Prenatal and Postnatal Instruction.

Respectfully submitted,
GREER BAUGHMAN, *Chairman*,
T. J. WILLIAMS,
P. W. MILES,
W. R. PAYNE,
F. O. PLUNKETT.

This report was adopted.

In the absence of Dr. W. P. Jackson, chairman, Dr. A. T. Finch, a member of the committee, was asked to present the following report:

Report of Committee on Child Welfare

TO THE HOUSE OF DELEGATES OF THE MEDICAL SOCIETY OF VIRGINIA:

For the Child Welfare Committee I desire to make the following report:

During the first few years of activity of our committee, we worked with the school superintendents and the health nurses of the State in an effort to increase the number of examinations of pre-school children of the State.

That work has grown, but it has not grown as rapidly as we would like. The latest figures, which I have been able to get, indicate some dropping off during the past year rather than an increase. I think two reason can be given which will largely explain that. In the first place, the nurses have, in many instances, put increased stress on immunizing against communicable diseases. That is to be commended and not criticized, but it has, naturally, left less time for emphasis to be put on the pre-school examinations. The other reason may be given as the depression. Parents did not feel they could afford the added expense of paying for the examinations unless the children were actually ill.

During the past year, our committee with the assistance of Dr. Bagby, of the State Health Department, has endeavored to discuss our plans with us many of the components of the State Medical Society as we could. We have appeared before twelve different societies scattered widely over the State. Almost without exception the doctors have shown a splendid spirit of approval and co-operation in trying to carry out our plan.

In spite of these efforts, the incomplete reports of pre-school examinations show less than one-tenth of those children being examined by their family phy-

sicians. As is previously mentioned, doctors are interested and will gladly co-operate in working out this plan. Has not a failure to reach so large a group in the past been largely due to the indifference of the parents? Can we expect the parents to be other than indifferent if they have never been shown or taught anything about the importance of health? I understand there is no required hygiene being taught at present in our high schools. Under the present trend and recommendation of leaders in education, personal and community, hygiene is to be taught in appropriate form for appropriate ages through all the grades to graduation. It so happens that at the present time, the State Department of Education is endeavoring to revise its curriculum to better improve the needs of the children according to the more modern conception of teaching. Is this not an excellent opportunity for our Medical Society to go on record as favoring more emphasis being put on preventive medicine and personal and community hygiene in the curriculum of the high schools of the State? Dr. Sidney B. Hall, State Superintendent of Education, in a communication to me, has expressed an appreciation of our interest in the proposed revision of the curriculum.

Would it be the desire of your Society for our committee to co-operate further with the State Education Department in helping to overcome that ignorance and indifference of the parents by proposing the proper amount of health education in our high schools in the curriculum? Or would it be better for a special committee to be appointed for that purpose? I would like very much to get an expression on that subject.

I think to further illustrate the need for such an instruction, I might point to the results of a test given to eighty freshmen entering one of our colleges this fall. The test included questions, the answers to which an average high school graduate would be reasonably expected to know. The grades on these papers averaged 59.6 per cent. When asked how many had had a course in hygiene in high school, only six answered in the affirmative. Those students came from about thirty different States, so presumably those six received their hygiene training in other States.

It would seem then, I think, that we have an excellent opportunity here in helping to further the program of improving the health of the school children of today and the mothers and fathers of tomorrow.

The Child Welfare Committee makes the following recommendations and resolutions to the Medical Society of Virginia:

We urge the Medical Society of Virginia either to appoint a Committee or authorize this present Committee to confer with the State Department of Education with a view of incorporating in the curriculum such revisions in health education as have been shown to be necessary to better training of children in personal and community hygiene and health.

WHEREAS, During the past year the deaths from diphtheria in the State of Virginia have increased to the extent that there were 225 deaths;

THEREFORE, The Child Welfare Committee offers the following resolution:

That the Committee urge the enactment of such legislation as will authorize the individual political units of the State to require immunization against diphtheria before admission to the public schools of the State in such communities.

We, the Committee of Child Welfare, recommend that the Medical Society continue to co-operate with the State Department of Health in their diphtheria immunization and preventive medicine campaign.

W. P. JACKSON, *Chairman.*

Dr. Moncure moved its adoption. Seconded.

Dr. T. H. Daniel stated that if we adopt the report we would also be adopting the resolution in the report. Dr. Harrison said that this question had been discussed by the Council and it was not their opinion that immunization be made compulsory. Dr. H. S. Daniel stated that this question was thoroughly discussed at the Governor's Child Welfare Conference and the fact was brought out that you cannot reach the child through compulsory immunization until six years of age. Statistics show that 50 per cent of deaths occur from diphtheria before the sixth year. If the public cannot get immunization free before the sixth year, they will wait until that time. The only way to reach the child before six is through the family physician. Dr. Herbert Jones then offered a substitute motion that we adopt the report without the resolution. This was seconded and carried.

Dr. W. B. Martin now moved the adoption of the resolution and this was seconded. Dr. F. D. Wilson stated that this proposal had come before the Child Welfare Committee that morning, and it was pointed out that in spite of the intensive work done by the State Board of Health, there had been about 400 deaths from diphtheria in Virginia last year, all of which were preventable. The committee felt that perhaps a law along the same plan as that requiring inoculation against smallpox would reduce the death rate. Dr. T. H. Daniel stated that they had tried a plan in Charlottesville to have family physicians immunize children before they were two years old. Talks were given in schools and letters sent out. He, personally, sent out 175 letters and had 100 children brought to him for immunization. He believed this a good plan and felt we should not call on legal aid until we have done all we could as practitioners. Dr. Martin's motion with regard to adopting the resolution, being put to vote, was lost.

Dr. Harrison said he would now change the order of business and have the election of officers while there was a good attendance in the House. Recess was taken that the delegates from the even numbered districts might select their Councilors for a term of two years. These were announced as follows:

2nd—Dr. P. St. L. Moncure, Norfolk.
4th—Dr. Wright Clarkson, Petersburg.
6th—Dr. J. T. McKinney, Roanoke.
8th—Dr. J. E. Knight, Warrenton.
10th—Dr. J. M. Emmett, Clifton Forge.

The President stated that we had a message from the Governor's office advising of the resignation of Dr. J. H. Ayres as a member of the State Board of Medical Examiners in the First District, and asking for nomination for this position. Dr. R. D. Bates, Newtown, was selected to be nominated to the Governor to fill the vacancy.

Dr. Flippin moved that, pending a final settlement of redistricting in Virginia, this Society should proceed on the basis of its past custom, and, in any legislation during the present year, the ten districts will be recognized as legal by decision of this body. Seconded and carried.

Dr. Isaac Peirce, as chairman of the Nominating Committee, presented the following names for officers for the coming year:

President-Elect—Dr. R. D. Bates, Newtown.

Vice-Presidents—
Dr. F. H. Smith, Abingdon.
Dr. James R. Gorman, Lynchburg.
Dr. R. L Page, Batesville.
Executive Secretary-Treasurer—
Miss Agnes V. Edwards, Richmond.

No nominations being made from the floor, Dr. T. H. Daniel moved that the secretary cast a ballot for these nominations, and Dr. Moncure moved that we express our opinion by a rising vote. Seconded and carried.

The election of a delegate and two alternates to the American Medical Association resulted as follows:

Dr. Warren F. Draper, Richmond, delegate for two years.

Dr. W. B. Martin, Norfolk, alternate for two years

Dr. F. H. Smith, Abingdon, alternate for one year.

Dr. Southgate Leigh, Norfolk, having been elected delegate last year, holds over until our 1933 meeting.

Dr. Isaac Peirce said there was a question he wished to bring before the House at this time—that last year when we voted to send out questionnaires with regard to the Eighteenth Amendment, a gentleman from Norfolk came to our assistance and furnished the necessary money. Dr. Peirce asked that the Society refund to Dr. W. B. Martin the amount that he put up for this work. Dr. Martin said several Norfolk doctors provided this money, as they were interested in getting rid of the Eighteenth Amendment and they would prefer to let the matter drop. Dr. C. P. Jones moved that we refund this amount. Seconded. Dr. Moncure was opposed to the payment of the money as he said we were assured last year that money would be pouring in for this purpose and he did not think this body ought to be called upon to pay. In spite of the fact that Dr. Martin again protested, the motion was carried.

Dr. A. F. Robertson, Jr, chairman, next presented the

Report of Committee on Public Relations

Your committee decided to conduct its work by correspondence unless the progress of our findings dictated other methods of approach. Accordingly, on March 1, 1932, letters were sent out to the secretaries of all component societies. This letter* was also published in the VIRGINIA MEDICAL MONTHLY and a copy is attached to this report.

Sixty-five letters were sent out to the State, district, county, and local medical societies and five replies were received. Only in the case of Fauquier County were any criticisms or suggestions advanced. These criticisms were chiefly against the county nurses coming into conflict with general practitioners and the unsatisfactory conditions in respect to midwives. As this letter was apparently a personal one from the secretary of the Fauquier County Society and dealt largely with local matters, your committee did not feel it proper to take any action.

In closing this report the committee feels (1) that the activities of the State Department have been so conducted in the past year that they have not materially encroached upon the rights of the general practitioner.

(2) That the regulation of midwives is unsatisfactory, but partly due to the apathy on the part of the general practitioner. This matter belongs under the head of a special committee, with which the public relations committee should cooperate.

(3) That Federal encroachment continues and must be combated in every way.

(4) That continued efforts should be made to promote understanding and goodwill between the laity and the medical profession and that this can be best accomplished by activities on the part of public relations committees from all county societies working in their own communities.

Respectfully submitted,
ALEX. F. ROBERTSON, JR.,
WADE C. PAYNE.

*Letter Referred to in Report

Staunton, Virginia,
March 1, 1932.

Dear Doctor:

The Committee on Public Relations asks that you give us your co-operation in an attempt to advance our work largely through correspondence. We feel that visits to the various societies at the present time would entail an ill-advised expense and work a hardship on the committee members.

The work of the Committee last year was largely a consideration of state medicine. So far as our own State is concerned we feel that we have nothing to fear from the activities of the State Health Department under the conservative and sympathetic direction of our new Commissioner Dr. Draper. However, in this connection we should like a statement from you as to local conditions especially covering the question of infringement by health workers and nurses.

In federal encroachment we see our most insidious attack, particularly in governmental hospitalization of all ex-service men for disabilities not incident to service.

Extension of this hospitalization to the families of veterans, to members of Congress, and to civilian employees are further steps along the road to state medicine which we should vigorously oppose. A discussion of this with our own representative in Congress stressing the enormous cost involved would be helpful. If we could induce the American Legion to substitute greater benefits for disabilities of service origin in place of this hospitalization it would carry enormous weight.

One function of our Committee is to promote better feeling toward the profession by the public and we feel this can be forwarded by having at least one meeting a year of general interest, open to the public. If a guest speaker is desired, a list of speakers may be obtained by writing to Mr. George W. Eutsler, Associate Director Extension Department, University, Virginia.

Will you bring these matters to the attention of your Society? Your Committee will appreciate any suggestions you may wish to offer.

Sincerely yours,
ALEX. F. ROBERTSON, JR.,
Chairman, Committee on Public Relations.

It was moved that this be adopted. Seconded and carried.

In the absence of the chairman, Dr. A. T. Finch, Dr. Nelson Mercer read the following:

Report of Committee on Military Affairs and National Defense

MR. PRESIDENT AND MEMBERS OF THE HOUSE OF DELEGATES:

Your Committee on Military Affairs and National Defense reports that during the past year the objects of two of the three resolutions adopted at the annual meeting of the Society in Roanoke in 1931 have been accomplished, namely, the appointment of a State Surgeon of the Virginia National Guard, and the assurance of the erection of a Veterans' Hospital in the western section of Virginia for the care of disabled veterans of the Spanish-American and World Wars who reside within this State.

The third resolution adopted at Roanoke last year related to proposed changes in existing army regulations which would liberalize the army extension course and camp requirements to be fulfilled before an officer of the Medical Corps Reserve, whose assignment is purely professional, can be recommissioned in the active Reserve Corps upon termination of his five-year commission period. Although no change has been announced to date, it is hoped that this will be done to prevent the separation from the Medical Corps Reserve of eminent specialists whose duties in Army Reserve hospital assignments do not

require a knowledge of military science and tactics, and whose membership in the Reserve Corps gives added prestige and interest to its affairs among younger officers.

Your committee considers its existence justified by the fact that its members are always alert to see that proper recognition is given physicians and surgeons of Virginia in various active and veteran military organizations, and other matters of interest concerning our National Defense.

The Medical Society of Virginia believes in an adequate defense for the protection of our national rights, therefore, be it resolved by this Society:

That Congress be requested to build the United States navy up to the authorized strength of the London treaty;

That the United States Army and National Guard be kept to a high standard, and that the Reserve Corps, Citizens' Military Training Camps, and Reserve Officers' Training Corps be kept up, in order that we may have an adequate force in training for the proper protection of our National Government.

The Medical Society of Virginia believes in adequate medical, institutional, and financial aid by the United States Government to all of our veterans disabled as a result of their honorable war service, and suitable provision for their dependents.

However, this Society, in the interest of the welfare of our nation, protests against the enormous amounts paid under the World War Emergency Officers' Retired Pay Act, and the disability allowance payments to veterans who may be injured entirely independent of their war service, as these payments will continue to increase each year and are fundamentally unsound.

Respectfully submitted,
ADAM T. FINCH, M. D., *Chairman*,
NELSON MERCER, M. D.,
JAMES T. SHELBURNE, M. D.

It was moved, seconded and carried that this report be adopted.

At this time, the delegates from the First District announced that they were ready to give the name of the councilor elected in place of Dr. R. D. Bates, who had just been made President-Elect. The councilor for this district for a term of one year will be Dr. R. E. Booker, of Lottsburg.

Dr. W. H. Higgins, chairman, next presented the following:

Report of Committee on Inquiry as to the Effect of Iodized Salt on the Thyroid Gland

Pursuant to a resolution adopted a year ago by the House of Delegates that a study of all available sources regarding the effect and results following the general use of iodized salt be made, your committee wishes to submit the following report. It was well understood from the outset that the subject was a controversial one and it was not anticipated that an absolute unanimity of opinion would be found.

In order to obtain the various points of view of clinicians in the widely scattered sections of the country, the committee selected a list of at least seventy-five representative physicians in the goitrous as well as the non-goitrous areas, to whom a brief questionnaire was sent. This group included well-known medical men in the United States and Canada, who by their contributions have shown themselves particularly interested in the study of goitre.

It was assumed that the object of the resolution was to determine the effect of iodized salt on the incidence of simple goitre and also its effect—if any—on the frequency of toxic goitre. A questionnaire was therefore formulated covering these points as follows:

(1) In your experience, do you feel that there has been a substantial decrease in the number of cases of simple goitre following the widespread use of iodized salt?

(2) Do you believe that there has been a relative increase in the number of cases of toxic goitre since the introduction of iodized salt?

(3) Is iodized salt in general use in your community?

This letter was mailed to the seventy-five physicians with a self-addressed stamped envelope inclosed. Replies were received from forty-three.

In answer to question one—with reference to a decrease in the number of cases of simple goitre since the introduction of iodized salt, thirteen (13) replied in the affirmative, thirteen (13) in the negative and seventeen (17) were non-committal.

In answer to question two, concerning a relative increase in the number of cases of toxic goitre following the use of iodized salt, fourteen (14) replied in the affirmative, nineteen (19) in the negative and eleven (11) were non-committal.

In answer to question three, relating to the general use of iodized salt in their respective localities, nineteen (19) replied in the affirmative, seventeen (17) in the negative and seven (7) were non-committal. No less illuminating were the additional remarks which were included with many of their replies. Iodized salt was the method of choice in every community where a universal administration of iodine was attempted with the exception of Rochester, New York. In this city iodine was placed in the water supply, which, according to McCann, was an effective method. A number objected to any wholesale type of medication, but advocated minute doses of the drug in tablet form only for children and pregnant women. Others were convinced that iodized salt had no effect on prevention of simple goitre and did not cause any notable increase in toxic goitres.

It was difficult from the assembled data, to obtain any accurate estimate as to the amount of iodized salt which is consumed in the different localities. Reports varied widely in the several states. In a personal communication from the Morton Salt Company, the committee was informed that two-thirds (⅔) of the table-salt supplied by them to Virginia was iodized. Out of justice to the salt industry, it should be stated that no extra charge is made to the consumer for the iodized salt, although there is an added expense to the manufacturer.

Iodized salt was first introduced by Marine and Kimball, in 1924, in Michigan. At that time a survey of the Detroit schools showed that 36% of all children had endemic goitre. In each succeeding year there was a definite drop, until in 1931 it reached a minimum of 2.1%. Reports from Grand Rapids, Akron, Ohio, and other cities are equally convincing as to the effect of this therapeutic measure in the prevention and apparent relief of simple goitre in school children. On the other hand, an equal number replied in the negative, although they offered no statistics to support their conclusions.

To what extent iodized salt can and does inactivate benign adenomas has never been definitely established. Crile believes that a number of such cases have passed through his clinic. Hartsook, his

associate, advanced the belief that a certain number of people who have been more or less iodine starved are more sensitive to the drug than the normal individual. Boothby, of the Mayo Clinic, states that "there has always been good evidence available that large doses of iodine given to patients who have adenomatous goitre will render some of them hyperthyroid." He feels that it is improbable that small quantities of iodine used in table-salt will materially increase the incidence of hyper thyroidism. McClure supports this contention by supplying figures from the Detroit hospitals which tend to show that toxic goitre operations have materially decreased since the introduction of iodized salt in Michigan. Lahey, of Boston, and Jackson, of Wisconsin, state that they have never been convinced that toxic goitres are increased by iodine. However, Tinker, of Ithaca, New York, has seen a definite increase in toxic adenomas since iodized salt was introduced and believes there is a definite relation of cause and effect.

In view of the fact that several physicians in the Tidewater section of Virginia have noted an apparent increase in the number of toxic goitres since the introduction of iodized salt, an analysis of the operative statistics from the two largest Norfolk hospitals was made. In the Protestant Hospital the records indicate that in 1925—when iodized salt was introduced—one (1) in three hundred and seventy (370) major operations was for a thyroidectomy. The ratio rose to one (1) in one hundred and two (102) in 1927, and in 1931 was one (1) in one hundred and seventy-two (172). Unfortunately, the type of goitre was not listed.

In St. Vincent's Hospital during the year of 1924, there was one thyroidectomy in every one hundred and twenty-eight (128) operations. In 1927 the ratio was one (1) in eighty-six (86) and in 1931 it was one (1) in one hundred and thirty-five (135). Dr. Martin, of Norfolk, states that in his opinion there has been a decided increase in toxic goitres during this period and his belief is shared by others in that vicinity.

With such divergent views held by equally competent men throughout the country, it is reasonable to assume that certain variables must enter into the picture in one locality which may not exist in another section. It is known, for example, that pigeons fed on a high calcium diet will develop goitres in spite of an adequate amount of iodine. Marine has shown that rabbits will have goitres when fed on winter cabbage, but will remain healthy when summer cabbage is supplied. Recent studies by Smith have indicated that the amount of solar radiation has a direct bearing on the incidence of goitre irrespective of other factors. Sturges, of Ann Arbor, has found that Lugol's Solution is less effective on patients suffering from Graves' disease in Michigan than in Boston. He believes that this difference may be due to the fact that patients who have been receiving minimum doses of iodine for some time have become refractory to the drug and are less responsive to its effect. Can it be possible that the iodine content of a thyroid gland harboring a benign adenoma varies sufficiently in different localities to make the response to iodized salt so contradictory?

In spite of the controversial aspects encountered in this review, the committee feels that the foregoing report justifies the following recommendations:

(1) In view of the fact that the Tidewater section of Virginia is not in the goitre belt and in view of the apparent increase in the number of cases of toxic goitre since the introduction of iodized salt, the use of this commodity should be discouraged in that section of the State.

(2) In order that the Medical Society of Virginia may have reliable data upon which to base further recommendations with reference to this subject, a State-wide survey of all patients entering hospitals for thyroid treatment should be made. Through the co-operation of the various hospital staffs, a history of iodine exposure could be obtained and tabulated by a special committee designated for that purpose. Such a study, if carefully made, would assist materially in clarifying the present state of confusion.

Signed: Wm. H. Higgins, *Chairman*,
Nicholas G. Wilson.

Dr. Clarkson moved that this report be received and adopted and that this committee be continued if Dr. Higgins felt he could accomplish anything more. Seconded and carried. Dr. Higgins stated that Dr. Showalter had been asked to be dropped from the committee. Dr. Flippin said he thought this was one of the most interesting reports which had been made at this meeting and he felt that the committee should be continued if Dr. Higgins would consent to carry on the work. Dr. W. B. Martin thought the report most excellent and felt that as the information given was not conclusive the committee should be continued.

The following report was presented by Dr. J. Allison Hodges, chairman:

Report of Advisory Board to Woman's Auxiliary

It is a pleasure to report that the work of the Auxiliary has continued during the year along progressive and constructive lines. It still seems difficult to enlarge the membership greatly, but most enthusiastic reports are given by the Auxiliaries of Richmond, Norfolk, and Petersburg, of their work in assisting the local profession in those cities.

The prime objects of the Auxiliary are to interpret correctly to the laity the major advances of modern scientific medicine relating to the public and to assist the local and state societies in medical and social welfare work.

During the past year, the Auxiliaries have aided in various forms of infant and child health education work; during the coming year, after consultation with the officials of the State Auxiliary, your chairman has advised that Dr. S. B. Hall, State Superintendent of Education, be aided in the new work he is undertaking in revising and changing the public school curriculum so that in the future more emphasis shall be placed upon making it more practical and also to include definite health instruction, not only in personal hygiene but also in home nursing, infant care, nutrition, and such subjects as shall best fit the pupils for meeting practically the actually existing conditions in ordinary everyday life.

In this and other allied work, it is believed that the Auxiliaries will be and already have been of great value to organized medicine in helping formulate correct opinions as to existing or suggested innovations in the future. Their printed reports will show in detail their special and valuable practical work.

Our members should give their hearty encouragement and endorsement to the Auxiliaries in the different sections of the State, for they are allies that will prove of increasing value through the

years and steadfastly aid us in the scientific and humanitarian advancement of our profession.

Respectfully submitted,

J. ALLISON HODGES, *Chairman.*

It was moved and seconded that this report be adopted. Carried.

There being no member of the Library Committee present, the President asked Dr. Wright Clarkson to read the report which had been submitted by its chairman:

Report of Library Committee

TO THE HOUSE OF DELEGATES OF THE MEDICAL SOCIETY OF VIRGINIA:

As Chairman of the Library Committee of the Medical Society of Virginia, I have given the subject of adequate library facilities for members of the Society considerable thought and study.

I am convinced that it will not be wise for the Society to go to the labor and expense of creating a library of its own, especially as it is now possible to secure satisfactory service without cost from existing libraries.

I attach letters from the Richmond Academy of Medicine, the University of Virginia and the Medical College of Virginia, all offering the facilities of their libraries to members of the Medical Society of Virginia.

I recommend that these offers be accepted and that the members of our Society be informed of the privileges now open to them by an announcement in the VIRGINIA MEDICAL MONTHLY.

STUART MCGUIRE, *Chairman.*

Richmond, Va., October 3, 1932.

DR. STUART MCGUIRE,
Chairman Library Committee,
Medical Society of Virginia,
City.

Dear Doctor:

At a meeting of the Board of Trustees of the Richmond Academy of Medicine, held September 30, 1932, on action of the Board it was decided to grant the privileges of the Richmond Academy Library to the members of the Medical Society of Virginia.

Sincerely yours,

THOS. S. JONES,
Acting Secretary-Treasurer.

University, Va., October 7, 1932.

DR. STUART MCGUIRE,
Richmond, Va.

My dear Doctor McGuire:

At the request of Dean Flippin of the Department of Medicine of the University of Virginia, I am answering your inquiry of September twentieth with regard to the Medical Library at the University.

On July 1, 1932, the Library contained 11,505 volumes and several thousand reprints and pamphlets. The books are fully catalogued, and a simpler form of cataloguing renders the reprints and pamphlets accessible. More than half of the books are volumes of medical journals, of which the larger part are bound. The recent acquisition of the Henle Library from Germany and of Dr. Stephen H. Watts' private library has added materially to the collection of journals.

By an arrangement with the Extension Division of the University, books belonging to the University Library, including the Medical Library, may, when not in immediate demand at the University, be loaned through the Extension Division to persons outside of Charlottesville. The cost of transportation is paid by the borrower. As the Extension Division is actively interested in co-operating with the undertakings of the Medical Society of Virginia, books loans to the members of that Society would no doubt be gladly arranged by the Extension Division from the available resources of our Medical Library.

Sincerely yours,

HARRY CLEMONS, *Librarian.*

Richmond, Va., October 12, 1932.

DR. STUART MCGUIRE,
Richmond, Va.

Dear Doctor McGuire:

In further answer to your letter of September 8th pointing out that the Medical Society of Virginia has long desired adequate library facilities for its members and asking to what extent our new facilities can be made available to the membership of the society, I wish to report that Dr. E. C. L. Miller, directing librarian here, and I, with others, have gone into this matter rather fully.

Now that the offices of the Medical Society of Virginia are conveniently housed in the building adjoining the library of the Medical College of Virginia, it is hoped that the members of the State Society will use the college library freely; books standing on shelves serve but little purpose. They soon become merely a museum. Ours is a working library and we want it to become increasingly such. It is gratifying that the physicians of Richmond are using it in this way; we should like to make it useful to the profession of the whole State.

The college library now contains approximately 20,000 volumes in the various health-service fields together with associated sciences, and receives approximately 500 journals. We should be glad to print a list of journals and circulate this as a college bulletin to the physicians of Virginia with an invitation to avail themselves of our resources. For your convenience we are attaching several typewritten lists of the journals.

The technical library staff is composed of four whole time members, Dr. E. C. L. Miller, directing librarian, Miss Florence McRae, librarian, Miss Margaret McCluer, assistant librarian, and Miss Staub, assistant. Headed by Doctor Miller, a physician of wide knowledge and experience in medical education, this staff is prepared to give a superior type of services, we believe.

The library is beautifully and conveniently housed. We most cordially invite the members of the State Society to use it in person. We are also prepared to send out material on request, asking only that the borrower return it under the rules for such loans and at his expense for postage. The mailing to the borrower will be done at our expense. Those requiring any form of library assistance are invited to make requests in person or by mail.

We should be happy to learn that the Medical Society of Virginia has officially accepted our invitation to avail itself of the library resources offered. We would then proceed to send out a bulletin to the society membership giving rather full details of the types of services that can be offered including a list of available journals. It will hardly be practicable to list the books available.

Cordially yours,

W. T. SANGER, *President.*

Dr. Harrison said that in connection with this report some disposition should be made of the books now owned by the Society. It was moved that they be given the Medical College of Virginia Library. Seconded. Dr. T. H. Daniel moved that they be divided among the libraries offering their services to our members. It being stated a quorum was not present so that a vote could be taken, the House adjourned to meet that evening at 9:00 P. M.

9:10 P. M.

The House was called to order by Dr. Harrison, President, and the question as to the disposition of the Society's books had first attention. Dr. Moncure moved that such books as were not necessary for use by the Society be given the Medical College of Virginia Library. Seconded and carried.

Dr. Harrison stated that the secretary had reports from several committees and asked if any member of these committees was present to present them. There being no affirmative answer, it was moved that the following reports be read by title and received and filed:

Report of the Committee on Scientific Work and Clinics

The members of the committee were notified October 30, 1931, of their appointment by Dr. I. C. Harrison. At the same time it was indicated that the Council had reduced the appropriation of this committee by fifty per cent, allowing only $50.00 rather than the $100.00 appropriated in former years for the accommodation of the scientific exhibit at the annual meeting.

The committee commenced work in May, 1932, getting in touch with prospective exhibitors, personally and by letter. At the meeting of the Program Committee, in Richmond, September 13, 1932, plans for the Clinics were discussed and arrangements made to feature a clinic on arthritis, by Dr. Robert B. Osgood, of Boston, an invited guest of the Society.

Additional clinics in Pediatrics, Obstetrics, Medicine and Surgery were suggested, and Dr. Lee E. Sutton kindly consented to arrange these clinics.

When the final program for the annual meeting of the Society went to press, twenty scientific exhibits and five clinics were listed as the accomplishment of the Committee on Scientific Work and Clinics, incidentally twice as many scientific exhibits as have been listed in any previous year.

The chairman takes this opportunity to express his appreciation of and to commend the energy and diligent work of Dr. J. Shelton Horsley, Jr., of this committee, and of Dr. W. Ambrose McGee, of the local committee, to whom the credit is due for the splendid exhibits.

The financial report of the committee is in keeping with the spirit of these "depressed" times. Having only $50.00 to begin with, the members of the committee did not draw upon this amount even for stationery and correspondence. Therefore, $50.00 was turned over to the local chairman to accommodate twenty exhibitors, allowing $2.50 per exhibitor to care for signs, space, lighting and other requirements. Further comment is unnecessary except to add that the individual exhibitors are due the thanks of the society for bearing the expense of their exhibits.

Certain detailed recommendations will be made at a later date to the Society, through Miss Edwards, the Executive Secretary. These will deal with certain "properties" for scientific exhibits that might be acquired by the Society. If such a plan can be worked out it will save a great deal of expense that is unnecessarily duplicated each year.

In the meantime it is urged most strongly that at least the $100.00 allotted the committee in former years, but a still larger sum if possible, be appropriated for the work of the committee.

Respectfully submitted,
J. Shelton Horsley, Jr.,
J. B. Nicholls,
C. Bruce Morton, *Chairman.*

Report of the Committee on History of Medicine

Since our last report, a year ago, we have been able to issue a second volume dealing with the History of Medicine in Virginia—Medicine in Virginia in the Eighteenth Century.

Work is progressing satisfactorily on the next and final volume, which we hope to complete a year hence. The committee respectfully requests that the appropriation of $600 00 be renewed, as without it we shall be utterly unable to continue this plan.

Wyndham B. Blanton, *Chairman.*

Report of the Committee on Anesthetists and Laboratory Technicians

To the House of Delegates, Medical Society of Virginia:

The Committee on Anesthetists and Laboratory Technicians for the year 1931-1932 submits the following report:

No meeting of the committee has been called during the year by the chairman, since, in his opinion, there were no developments which would warrant the time and expense involved in assembling.

The reports of former committees pertaining to laboratory technicians have been reviewed.

Recently, through correspondence with Dr. William S. Cutter, secretary of the Council on Medical Education and Hospitals of the American Medical Association, and with Dr. Philip Hillkowitz, chairman of the Board of Registry of the American Society of Clinical Pathologists, information relative to attempts, of national scope, to standardize the qualifications and training of laboratory technicians has been obtained.

The American Medical Association has not formulated a set of standards for the training of laboratory technicians, but because of frequent inquiries, has prepared a tentative list of a limited number of schools that they know to be considered reliable.

A definite and increasingly successful endeavor on the part of the American Society of Clinical Pathologists, through its Board of Registry, to standardize the qualifications of laboratory technicians and of training schools for laboratory technicians, has been in progress for several years. This Registry has the cooperation of the American Medical Association and of the American College of Surgeons. A booklet descriptive of its work is available.

The board investigates the qualifications of applicants and issues to those technicians who are acceptable its certificate of registration. Over 1,200 technicians now are on the list of registrants. Similarly, schools and laboratories conducting training courses for technicians are investigated, and a certificate is issued to those which have registered with the board and are approved by it.

The minimum requirements of the Board of Registry for approved training schools for laboratory technicians are:

a. The training school must be under the supervision of a clinical pathologist.

b. It must have hospital connection of 150 beds or over to insure sufficient material for study.

c. It must require a one-year college course in chemistry or biology in addition to a high school diploma before admitting students.

d. The course must be of at least twelve months' duration.

The Committee on Anesthetists and Laboratory Technicians advocates that the Medical Society of Virginia endorse the program of the Board of Registry of the American Society of Clinical Pathologists as regards the approval of technicians and training schools, and that its members urge prospective technicians and training schools for technicians to comply with standards established by this Board of Registry.

Respectfully submitted,
I. H. Goldman,
E. L. Kendig,
Oscar Swineford,
Wright Clarkson,
Lewis C. Pusch, *Chairman.*

Report of the Committee on Group Societies

To the House of Delegates, Medical Society of Virginia:

Due to the death of two of the previous members of this committee, we were not appointed until August first, of this year.

The work that had been done by Dr. Grandy, chairman, was turned over to our committee, and has been thoroughly reviewed. We have not had a meeting during the year but have corresponded regarding the different phases of the work.

We do not feel that the group societies can be arranged to correspond with the congressional districts, and due to the present chaotic condition of redistricting of the State we do not feel that any change should be made at the present time. There are a few counties which are unorganized and will require further study and correspondence with the councilors at present in office and those to be ap-

pointed before we can make an intelligent recommendation as to the redistribution of these counties.

We recommend that the number of councilors remain at ten, at least until the redistricting of the State has been made in an intelligent and satisfactory manner.

Respectfully submitted,
W. L. Powell, M. D., *Chairman*,
W. B. McIlwaine, M. D.
W. L. Harris, M. D.

Report of Committee on Mental Hygiene of the Medical Society of Virginia

1. That the Society further endorse the work and educational program of the State Bureau of Mental Hygiene, especially in its desire to establish clinics throughout the State.

2. The committee recommends that the Society, through its legislative committee, sponsor a bill and attempt to have passed, a law making it compulsory to have all cases of capital offense examined by a competent board of three examiners, one of which at least shall be a specialist in Mental and Nervous Diseases.

3. The committee recommends that the Society heartily endorse the Mental Hygiene movement in the public school system of the State, and cooperate with the schools in every way possible.

4. We recommend that the Medical Society of Virginia call special attention to the proper authorities of the State to the urgent demand for more adequate provision for the feebleminded and epileptic.

5. We further recommend that a committee be appointed by the President to continue the study of Mental Hygiene in accordance with a previous resolution.

David C. Wilson, M. D.,
James H. Royster, M. D.,
Frank H. Redwood, M. D., *Chairman*.

The recommendation presented by Dr. Moncure in the Council Tuesday morning, with regard to the veterans' hospitals, was read. Dr. W. B. Martin moved that this be tabled, in view of the resolution in regard to this subject, which was presented by Dr. Collins, on Wednesday afternoon following the report of the Committee on Medical Education and Hospitals. Dr. Moncure said there was no need of taking any action on the recommendation in view of Dr. Collins' resolution. Dr. Martin's motion was seconded and carried.

The President then asked for a report from the committee to whom the correspondence had been referred. Dr. Moncure stated that there were a couple of questions which should be answered through the Monthly, and suggested that they be so handled in an early issue in a department to be known as the Question Box. Two of the letters were referred to the Committee on Legislation and Public Health, and the others were tabled.

As no invitations were received for the 1933 meeting, except from hotels, it was moved that the Council be empowered to select the dates and place for our next meeting at its winter session. This was seconded and carried.

Under the heading of unfinished business, Dr. W. W. Wilkinson moved that the Society be divided into two sections—one on surgery and one on general medicine. After quite a discussion as to the arrangement of the program so as to insure the greatest amount of interest, it was decided to leave the matter to the Program Committee. Dr. Wilkinson's motion was lost.

The President now recognized Dr. W. O. Bailey, who read the following statement:

Gentlemen:

To me is entrusted a grave responsibility: the responsibility of stating to this assembly that many of the physicians in the eighth congressional district have lost confidence in the sincerity, judgment and sense of justice of the Medical Society of Virginia and expect to take immediate and vigorous action to change the policies and programs which have subverted their interests, thwarted their plans and made them subservient satellites and intellectual menials. Thoroughly to understand how the cataclysmic changes have occurred which necessitate our action, it is necessary to retrace, for a few years, what has been taking place in medical thought and medical practice.

Fifty years ago the armamentarium of all physicians was bottles, thermometers and stethoscopes. There was but little difference between the ability of the urban and rural practitioner. A silk hat, long whiskers and a sober, impressive countenance, coupled with common sense, reasonable ingenuity and average judgment, might be found in either place. There was nothing to mark one set of men as being essentially different from the other.

Then the refinements of surgery came, requirements to enter medical schools increased, the mechanical adjuncts to diagnosis arrived, became established and soon had their ascendency. The new physician preferred not to go to the country; the old physician was not trained in the mechanical arts of medicine. His patients began to feel less dependence upon him and more dependence upon his urban confreres. In the rural communities patients were not only patients—they were friends. The rural practitioner, as soon as he became aware of what benefits might accrue to his patients, began to refer them to his urban friends, little dreaming what this would eventually cost him. A superiority was soon felt in the cities. Dependence always breeds superiority. To his amazement, chagrin and indignation, in many instances, cases referred for one thing were treated for many things within his purview and without the purview of the man to whom the case had been referred. In a few instances receipt of the patient was not acknowledged, in many instances his progress was not reported and, in a rapidly increasing number of instances, he was never heard of again. He had entered that greedy, yawning, urban abyss; he could not scale the acclivity; he could not break through the strong, stubby, determined fingers of that clinical octopus.

The men who held the patient were in possession of new and alluring knowledge. Soon they developed a skill impossible in rural districts and very small towns. The fruit which they had plucked was golden; they saw medicine in panorama; serene and confident, they sat on a hilltop while the rural physician still strained his shaded, blinking, incredulous eyes high up toward them in wistful hope and artless wonderment. What happened was inevitable. Unable to bridge the vast chasm which yawned between them the rural man became confused, introspective and half-ashamed and the city man lofty, loquacious and patronizing. The one developed an inferiority complex and the other delusions of omnipotence and grandeur. It looked as if the chasm

would never be bridged; it seemed certain that the rural physician would always be the loyal and dumb servitor of his brother more fortunate in his geographic situation. But nothing is static; everything is in motion; transmutation is as natural as sunlight. It was so in medicine. The change came unexpectedly though not suddenly. Out of a clear sky the automobile obtruded itself. Gradually the economic status of the countryman and the country physician began to change. It started about 1896 and has progressed since that time without recession. Hand in hand with the change came good roads and telephones. Country physicians were no longer inaccessible nor was their cruising radius limited to eight or ten meager miles. The county seats saw more of them and then the big cities, with mechanized medicine, beckoned seductively to them. To see was to emulate. Their intelligence, at the start at least, equalled that of their urban brothers; they had been restricted by opportunity. One would have thought that good roads would have more and more removed rural patients from the purview of the country physician. This did happen to some extent but increased traffic, through rural communities, with its concomitant accidents, demanded rural hospitals and rural hospitals came and came to stay.

With the advent of the rural hospital a new individual sought the country. He was no more intelligent, no more able, not as efficient in coping with rural conditions, but he was plastic and compliant, and he was willing to learn. The country physician taught him what he knew about rural medicine and, in return for this knowledge, he persuaded the countryman that mechanized medicine was not omniscient and had some drawbacks.

This new individual, in many instances, came from the post-war demobilized army and navy. He understood mechanized medicine very well but, more important than this, he understood better the great medical monopoly which had sprung up in the cities. He had expected to find in the country a set of men, who were ante-diluvian in thought and action. To his astonishment he found a set of men whose native wits, on account of the lack of the instruments and machines of this new mechanized medicine, had been sharpened to a degree so remarkable as to make him wonder if he, without these instruments and machines, would be a fair match for them. He marvelled at their ingenuity, he was astounded at their devotion to duty; he was astonished at their obstetrical ability; he stood in homage before their transcendent spirits; and he realized, for the first time in his life, that a knowledge of human psychology could be obtained only in a world shorn of artificiality and inanity. A version on a dirty bed was common; a curettement on a kitchen table was usual; an appendectomy on a folding or improvised operating table made him thrill with the pure joy of crusading conquest. Doubt was changed to conviction; uncertainty to surety. At first he began to wonder if there was much less efficiency in the country and then he began to wonder if there was much less efficiency in the city. Physicians look after their patients who are friends astonishingly well. After all, intelligence and devotion to duty are paramount in the successful treatment of disease.

When the new arrival became convinced that these country physicians did not deserve the opprobrium which was being heaped upon them openly by their public, and covertly by their brethren in the city, who often betrayed them with a kiss, he determined to lay the truth, stark, naked and unvarnished, before them. This he did. At first his new friends were incredulous. Somehow they could never feel that they had the right to inspire the same sanctified air which their urban brothers drew. The abyss was too wide; the edge too precipitate; the way too tortuous. They would be laughed at; their pride would be hurt. The transmutation was not abrupt. It began insidiously; scarcely appreciable at first; but the seeds were sown. Later they would bear fruit. They would blossom but they would blossom only when they were jolted rudely into realization. This came, of course, in due time, but it came circuitously.

The great universities of the country, to give better theoretical education, began to consolidate; full time instructors began to increase; their interest in private practice began to wane. Ethics, and honor, and ideals had a renaissance. They were injected into every course of lectures and preached from every classroom. Abnegation must be the guiding star; self-effacement the buckler. This perhaps might have passed muster in a non-materialistic world, but the world was no longer non-materialistic. If the great teachers had willed it, and, of course, they did not will it, they could not have turned out men less fitted to cope with the cupidity, selfishness and vindictiveness of a practical world. Their lambs soon were shorn of everything they possessed, including their wool; naked and shivering, they cursed their guilelessness and reviled the institutions which had unwittingly betrayed them. One hundred and fifty of them now stand as humble suppliants in the bread line in New York, while more and more are being turned out every year from medical schools to take their places in the bread line. Their only alternative was to look to the medical monopoly, but this was futile. They were so busy treating as charity the cases which the young doctor might have had as pay cases that their guilt made them conscience-stricken and inaccessible. In desperation, they turned to ruthless collection agencies and malpractice insurance to protect their homes and defend themselves. Their former friends and patients, outdone with mass practice and resentful at the lack of humane consideration in some of the large hospitals of the cities, charged them with mercenary motives, because they were physicians, and proceeded to defraud them of the righteous fruits of their toil. They never took into consideration that the defrauding preceded the attempt to collect.

This would have been bad enough. It was only a sin of omission and heedlessness; ignorance and selfishness could be forgiven. But what happened now could not be forgiven. These teachers relieved themselves from competitive medicine, began to inaugurate the most ruthless, the most brutal, the most selfish system of competitive medicine which mankind has ever known. They did it largely through the instrumentality of the newly organized public health service. In evincing their profound love for lay humanity, they forgot entirely reason, justice and mercy. They penalized medical humanity and they demanded this penalty with unction, smirking and in the guise of friendship.

When the hydra-headed monster of their own creation began to strain at its leash and get without bounds, they knew that the day of stern accountability was at hand. They decided hurriedly that they must fix the blame and that it must not be upon themselves. Straightway they turned to the health department. This department, unluckily for them, was unassailable; its escutcheon was untarn-

ished. It had always proceeded in the open. Any progress which it had made at the expense of the men in general practice, and, doubtless, it had made great inroads upon them, it had made openly. And, after all, due to the lack of vision of the great teachers of medicine, it was filling a place in the body politic which the medical profession might and should have filled. It is natural for any organization to desire expansion; it is solely by this means that it justifies its existence. Ten thousand dollar health units must be admitted to be ideal if the taxpayer can stand it. The Department of Health of the State of Virginia is an organization of which all the physicians in the State are justly proud. If free clinics were founded, whose fault was it? If county and district nurses were hurried to the remote fastnesses of the United States, and especially the State of Virginia, to compete with the local physicians and destroy them, whose fault was it? If the Red Cross, in the name of humanity, harnessed, employed and invaded the field of medicine, working physicians, in prophylactic clinics, without compensation, inimical to their own interests, whose fault was it? The answer is too obvious. Surely the Department of Health has a right to initiate and carry out anything promoting the general health of the State of Virginia, provided it has either direct or tacit consent. The Medical Society of Virginia knew every move that the Directors of Health, both past and present, made or contemplated making, and, if it did not encourage them, and spur them on, as it often did, at least it gave its tacit agreement. The two Directors of Health which the State has had have been men of intelligence, honor and attainments of a very high order. If they asked for increased appropriations, can they be censured? They had a perfect right to ask; in fact, it was their duty to ask. It was for the Medical Society of Virginia to advise the legislature and the legislature to do the curbing. Did it do this? If so, when?

But what about the rural physician during these metamorphoses. What was he thinking? What was he doing? How was he meeting the invaders? They told him that a terrible emergency existed; that disease must be stamped out, the rural physician taught the imperishable truths which they had so sedulously garnered, and humanity saved. Doubtless there was some truth in what they said but not very much.

The rural physician, still almost in his pristine state of trustfulness, was credulous. He was persuaded that these paragons of human knowledge could save humanity and, of course, he wished humanity saved. We welcomed them with open arms and in they rushed like the waters through a broken dike. I have stated that the monster was hydra-headed; it was impossible for the central health authority to know its minute ramifications or stem its ultimate torrents. At first they were solicitous, then they were cooperative; finally they were mandatory and scarcely veiled implied threats. They had the majesty of the law behind them and the rural physician was still poorly organized, if organized at all. Vaccinations against preventable disease, he was told, no longer were his function, tonsil clinics, refraction clinics, even if they taak cases from him which could pay and treated them without compensation, helped humanity and saved the taxpayer money; orthopedic, genito-urinary clinics and tubercular clinics, must be inaugurated on account of his ignorance and their necessity.

What was the rural physician doing? First he wondered; then he entreated; now he demands.

His rising storm made them hesitate and counsel. They would have an armistice and then take him unawares, and proceed relentlessly against him later. Smiles and smirks and conciliations came from the four winds but, mind you, never voluntarily, and only at his insistent demand and threatening rebellious gesture. He was strong in politics and he was becoming organized. The times were becoming more uncertain; perhaps appropriations might become touched. It might be that, after all, ten thousand dollar health units, in one hundred counties at an annual expense of $1,000,000.00 per annum to the taxpayer of Virginia, might not meet with the heedless response of formerly.

This was bad enough but worse was to come. If he protested, if he would not permit them to sack and despoil him in the name of humanity then, in the name of science, they would defy him, betray him and destroy him. And this is the way they did it and the way they still do it. Certain hospitals in the State are run wholly or partially by State and municipal funds. Physicians at the bottom, and on the periphery, are not on the staffs of these institutions, or, if they are on the staffs, they are relegated to the dispensaries. The services are maintained by a few men These men care little whether a case is charity or not. The small fee which they might obtain from the pseudo-charity case is a matter of indifference to them. They use the charity and the pseudo-charity case as a pawn with which to attract the wealthy case. The kindness of heart and philanthropy which they evince, at the expense of the less fortunate physician, exalts them in the eyes of the wealthy dowager who must feel vicarious virtue through someone, so why not help? Unwittingly she is baited by this type of individual. They angle for her with pseudo-charity and, as a rule, she bites.

To cite an example of pseudo-charity: A banker in a Virginia village elected to have a tonsillectomy performed on his wife in Charlottesville, at the University of Virginia Hospital. Surgery was free; the total cost was $12.00. The local surgeon lost $50.00 and the local hospital $20.00.

To cite another example; A young woman living just outside of a small Virginia village, developed some abdominal condition. The county nurse was her friend. A car was soon speeding to Richmond. She was charity, but the mansion in which she lives, she says, she would not take less than $28,000.00 for. Instances could be cited *ad infinitum.* There is not a physician in this room who could not enumerate them from his own experience.

We are not impressed with the dilatory action of the American Medical Association, and of the Medical Society of Virginia, in calling to our attention, in the fall of 1930, eight years after the Veterans' Legislation had fastened its ugly claw about our throats, that the Veterans were threatening our very existence; we are impressed with the fact that the inauguration of the Public Relations Committee was entrusted to a country physician and that he acquitted himself remarkably well in spite of the lack of co-operation in several councilor districts, and, especially one of the great cities of the State. We consider this tardy notification a manifestation of leadership of a very low order and we hold the American Medical Association and the Medical Society of Virginia directly responsible for their part in not more effectively attempting to stem the expenditure of $978,000,000.00 of the taxpayers' money last year for Veterans' Legislation. Bernard M. Baruch estimates that for 1932 the national, state,

municipal and other government expenses will be fifteen billion dollars and the national income forty-five billion dollars. In 1912 the national, state, municipal and other government expenses were two billion dollars and the national income thirty-three billion dollars; in 1930 these expenses were twelve billion dollars and the national income fifty-six billion dollars. Any organization heedless enough to urge no attempt to inhibit vast public health and other paternalistic expenditures, of danger and detriment, both to the taxpayer and the rural members of this society, thus aiding and abetting this glaring disproportion of increasing expenditure and declining income, deserves censure and does not merit confidence. Did the Medical Society of Virginia ever once caution against heedless and precipitate expenditure for state public health? Did the Medical Society of Virginia ever attempt to stay the Department of Health in its annihilation of the rural physician? If so, the rural physician would like to know when.

It is not pleasant to present these facts; it is not pleasant to hear them, but the days of genial acquiescence are past and the days of bitter realization are here. The physicians of the eighth congressional district make their demands for the following reasons:

(1) The average physician practicing in towns of 2,500 and less, and in rural communities, is more efficient than the average urban physician, as evidenced by the following facts:

(a) He is a better obstetrician. In rural communities the obstetrical deaths are 6.2 per thousand; in urban they are 10 per thousand.

(b) He is a better pediatrician. In 1924, in rural communities the deaths of infants one year old and younger were less than in urban communities. This has continued through the year 1930—the last year for which statistics are available. For the eight congressional districts and the cities of Virginia these rates are as follows:

(Deaths to 1,000 living.)

	1924	1925	1926	1927	1928	1929	1930
Eighth Congressional District	66.0	58.9	73.6	64.7	63.1	71.4	69.3
Average from 1924 to 1930							66.91
Cities	98.0	100.6	104.9	84.2	94.6	95.1	92.1
Average from 1924 to 1930							95 64

It will be noted further that the average of deaths is less in the rural communities of the Eighth Congressional District than in the great teaching center of Richmond, whose rate is 86 to 1,000 living.

(c) He is more efficient in the practice of medicine in its final integration, because under his care people live on the average to be forty-nine years old, while under the care of his city confreres they live to be only forty-five years old.

To put these facts in another way: Of every hundred thousand women delivered in the State of Virginia in urban communities 1,000 must expect to die, while in rural communities only 620 will die. A human life's monetary value has been variously given. A very meager value would be $20,000.00. If this is taken, with every 100,000 deliveries urban physicians lose the state $7,600,000.00, which would not occur if these women were delivered in rural communities; similarly calculated for infants one year old and younger, this loss is $57,460,000.00—total of $65,060,000.00. To figure the saving in longevity by rural residence under the care of rural physicians is only a matter of arithmetic.

The counties of the Eighth Congressional District are: Loudoun, Fairfax, Arlington, Prince William, Stafford, King George, Culpeper, Orange, Louisa, Fauquier.

The cities included in this computation are: Charlottesville, Clifton Forge, Alexandria, Staunton, Lynchburg, Petersburg, Winchester, Richmond, Radford, Suffolk, Norfolk, Portsmouth, South Norfolk, Danville, Hopewell, Roanoke, Buena Vista, Harrisonburg, Fredericksburg, Newport News, Bristol.

Better obstetricians, better pediatricians, better physicians despite the following adverse conditions:

(1) The millstone of 4,062 rural midwives against 335 urban midwives; (2) only eight hundred rural members of this society caring for their share of 1,636,314 people, against 896 urban members of this society caring for their share of 785,537 people; (3) with only 15% trained nurses against 85%; (4) with fewer than 20% of hospital beds against over 80%; (5) with fewer specialists (estimated, not determined); with an expenditure for public health of only one-half as much; (6) with markedly fewer clinics for the poor (except orthopedic and T. B.); with 1,359 cases of typhoid fever against 182; with 8,256 cases of diarrhoea and dysentery as against 27, and (7) with a multiplicity of unsupervised infected water supplies and unsupervised and infected milk supplies (except for tuberculosis).

(2) We have been discriminated against, as evidenced by the following facts:

(a) Grudging and occasional appointment of rural physicians to chairmanships of standing committees.

(b) Occasional election to the presidency of the Medical Society of Virginia. Dr. Stephen Harnsberger, Catlett, was elected in 1914, by strategy, from the floor. From 1873 to 1911 there have been nine presidents from towns of 2,500 and less, despite the fact that there are only 896 members of this society from towns of more than 2,500, as against 800 members from towns of 2,500 and less and rural communities. Apparently this majority of 96 has determined a continuous occupancy of the presidency from 1915 to 1932, inclusive—a period of eighteen years.

(c) We are denied the right to represent rural communities in the American Medical Association as delegates of the Medical Society of Virginia.

(d) We are forced to combat an anachronistic, atavistic tyranny supposedly settled at the Boston Tea Party, over one hundred and fifty years ago, viz., taxation without representation.

The question naturally obtrudes itself as to whether a medical society which (1) aids and abets the Department of Health in its just ambition of attempting to place a million dollar burden per annum on the taxpayer, in competition with the man in private practice in the licensed pursuit of his calling; which (2) endorses institutions which instruct their graduates in ethics and then, contrary to every principle of ethics, justice and friendship, competes with those graduates covertly and unfairly; which (3) consistently insists upon denying men from rural communities the right to serve as president of the state society, except occasionally and for placation; which (4) taxes equally the under-privileged with the privileged; which (5) consistently refuses rural physicians the right to representation as delegate in the American Medical Association; (6) which endorses, and is a part of an association like the American Medical Association, which consistently refuses to elect to its presidency men from rural communities; (7) which attempts to block measures which are in accord with the will of the majority of the delegates and then, when those measures are successfully passed, from the chair, still threat-

ens not to carry out those measures; (8) which is in hearty accord with a plan to permit physicians from the cities to read papers in majority, to the exclusion of men from the small towns and rural districts; (9) which permits a councilor from the city, arrogantly and disdainfully, to fail to reply to two communications from a constitutional committee, without even a reprimand, because its chairman was from a remote country village and was beneath the notice of this exalted councilor; (10) which permits a majority of papers to be read at its meetings of no general interest to rural physicians; papers which deal with abstruse and complicated problems of no interest and practical benefit to the rural physician, and designed, in many instances, to exalt the urban man and impress the rural man; (11) which evinces a haughty, unbridled and persistent disregard for the desires, feelings, aspirations and just dues of the rural physician, can hardly be an institution which the rural man could be expected to favor or support. To him the Medical Society of Virginia is "The Medical Oligarchy of the City of Richmond"; to him the American Medical Association is the "Morris Fishbein Medical Association."

Having clarified our position the question now arises as to what we shall do It must be apparent that this matter has received much careful thought from us and that we have soberly decided upon a plan of action. We have. However, we do not believe that it will ever be necessary to announce our plan of action. We feel so sure of the sympathetic reception of our demands, in common justice, and we know so well the urban members of this society as individuals, that action, for the present, at least, will be put in abeyance. What we want are the following:

(1) An equal right with the men from urban communities to serve as president of the society and chairmen of its committees in proportion to our membership, viz., to serve in the ratio of 896 to 800.

(2) Equal representation within the House of Delegates in the American Medical Association; ratio 896 to 800.

(3) An immediate cessation of the destructive practice of admitting to state, municipal and other hospitals charity cases which are not charity cases.

(4) The same courtesy and consideration from others which we extend to them.

(5) An immediate cessation of the prevalent system of taxation without representation in every manner.

(6) A section on rural medicine where we may read and enjoy papers which appertain to our work and our necessities.

These demands may be denied; our wishes may be thwarted; sane conciliation may not supersede surly and arrogant indifference, but we have made our position clear. This is a righteous cause. A righteous cause never dies. We assure you very solemnly that this one will not, because we are only the vanguard of a mightier host which is to come.

W. O. Bailey.

No action was taken on this.

Dr. Herbert Jones then presented the following resolution: That this Society express its appreciation by a rising vote of thanks to the committee in charge of the arrangements for this meeting, the Richmond Academy of Medicine, the Medical College of Virginia, and the citizens of Richmond, for their excellent arrangements, wonderful facilities, many kindnesses and hospitality.

There being no further business, the House adjourned.

Agnes V. Edwards.
Executive Secretary.

Woman's Auxiliary, to the Medical Society of Va.

President—Mrs. William Lett Harris, 1112 Matoaka St., Norfolk.
President-Elect—Mrs. Joseph Bear, 3012 Monument Ave, Richmond.
Recording Secretary—Mrs. Fletcher J. Wright, 49 S. Market St., Petersburg.
Corresponding Secretary—Mrs. Charles A. Saunders, 1000 Gates Ave., Norfolk.
Treasurer—Mrs. Reuben F. Simms, 2034 Park Ave., Richmond.

Valedictory.

To the Members of the Auxiliary:

In closing my administration, I wish again to thank the members for their cooperation during the past two years. I feel especially grateful to all who made the Convention such a success, to the speakers for their helpful and illuminating talks on how "To Have Healthier Children for our Nation," also to the local chairman, Mrs. Sutton, under whose able leadership each one willingly and efficiently performed the duties assigned her.

The attendance was large and enthusiastic —more than 150 registered. Much information and inspiration was gained from the business sessions. The social affairs were delightful and gave the wives of the Richmond doctors as well as their guests the opportunity to become acquainted and get in closer touch with each other.

A visit from the National President always stimulates the growth and influence of an auxiliary and adds prestige to the Convention. We had been anticipating for months the pleasure of having Mrs. Walter Jackson Freeman with us so that the announcement of her death a few days before she was to have been with us caused profound sorrow. Those who had the privilege of knowing her realize what a loss she is to the Auxiliary. Mrs. Freeman was a remarkable woman of dynamic force, combining executive ability in a high degree with a winning personality, and her influence will be felt for years to come.

We will always feel indebted to Mrs. Haines Lippincott, one of the National officers, who so promptly and graciously consented to come to our rescue at the eleventh hour. Her witty clever speech given at the opening meeting of the Convention made a great "hit" with the doctors and I am sure increased their interest

and respect for our Auxiliary. She was present at all of the business sessions and gave us many helpful suggestions in addition to her inspiring speech.

To be of real value, we must have more Auxiliaries. I pray under our new and enthusiastic young president, Mrs. William Lett Harris, Virginia will become better organized. We all must give her our loyal support.

President's Report—Richmond—November 1-3, 1932.

Two years ago, when I was elected President of the Woman's Auxiliary to the Medical Society of Virginia, I felt that you had conferred upon me a great honor, and also laid upon me a heavy responsibility. I have tried to show my appreciation of the honor by living up to the responsibility, and have given unstintedly of my time and strength to promote the work of the Auxiliary. While we have not accomplished all that we hoped to do, I feel that we have proved the value of the Auxiliary and put it on a firmer foundation.

We can best aid the Profession by being thoroughly informed of the aims and ideals of Scientific Medicine and thus be able to assist the woman's organizations that are doing welfare work. The crusade for better Public Health in the United States is often capitalized by cults, faddists, and quacks of every degree, who gain the support of earnest but misguided women to put over their false doctrines, and here the members of the Auxiliary can be of great help.

Nearly every Woman's Club in the State has a Welfare Committee, and is doing excellent work in supplying lunches and clothing for school children and many doctors' wives are serving on these Committees, and the doctors usually give their services. While we are glad to have this work done by the Club women, we fear it has prevented the women from organizing Medical Auxiliaries in some of the towns, and the Clubs, and not the doctors get the credit for this important work.

We were glad to have the Auxiliary officially recognized for the *first* time by the Medical Society of Virginia in Roanoke as one of its departments, when our President was requested to report with the other Committees at their night session. We, also, had messages of encouragement and appreciation of our work from the President, President-elect, and our Advisory Committee. No work, especially along the lines of legislation, is ever undertaken without the approval of our advisory committee.

We have endeavored to have our standing committees correspond to those in the National Auxiliary, insofar as they are necessary for the State work. Namely: Health Education, Legislation, Public Relations, Organization, Press and Publicity, Hygeia and Historian. The chairman of each department, also the president of the several auxiliaries will be called upon to report their own work so I will only state that the Auxiliary has taken part in securing county nurses, has provided free beds and libraries in many of the hospitals; has assisted in the pre-school examinations; the early diagnosis for Tuberculosis, and has cooperated in all health movements and is filling a vital need in their own communities.

A new auxiliary in which I was greatly interested was the Woman's Auxiliary to the Old Dominion Medical Society—a negro organization. I was asked by the President of the Richmond Auxiliary, the wife of Dr. Hughes, to make a talk at their meeting. I asked Mrs. Smith to accompany me. We found a very intelligent group of women, with Mrs. D. W. Byrd, of Norfolk, President of their State Auxiliary. I was surprised to hear they had six auxiliaries in Virginia and were supporting a bed in the T. B. Hospital in Burkeville. I feel that we should encourage our colored people and teach them cleanliness, order, and sanitary methods as much for our own protection as theirs, for we are dependent upon them for much of our comfort and associate intimately with them in our homes. Last summer we were greatly interested in establishing a negro health and recreation center in Richmond, it cost $15,000 and of that amount the negroes raised over $1,700. This center will fill a great need.

A little report of my stewardship—I have constantly tried to organize auxiliaries in new and remote sections of the State. There seem to be few doctors in many of our counties and it is difficult to get their wives together. In January I had a pleasant meeting with the Danville Auxiliary. While on a visit to Norfolk in May, a group of the officers met to discuss ways and means. Last summer, while in Mecklenburg County, I tried to interest the women in Clarksville and South Boston, but they said that there were too few doctor's wives to organize, so I invited them to be as-

sociate members. One meeting and a card party were held at my home last spring to aid in the furnishing of the reading room in the new Miller Library.

The official publication of the Society, the VIRGINIA MEDICAL MONTHLY, has generously given us several columns in each issue, which we gladly fill and find it a great help in informing the public, as well as the members, of the work being done by the Auxiliary. Besides these monthly articles, I have written many letters to our National Chairman, and hundreds to doctors and women in the State, in trying to enlarge the Auxiliary. I have attended numerous Health Educational Lectures and Auxiliary meetings. I have tried in every way to stimulate interest in the Auxiliary, and, while the indifference and lack of response is somewhat discouraging at times, I realize it requires time, education and courage to get cooperation, and a new organization to function properly.

Our special State work is two-fold: First, Public Health Education in general; and second, the education of prospective mothers. The State Society, through its Department of Clinical Education, is seeking to educate women in Child Welfare by holding prenatal and postnatal clinics throughout the State. The appalling mortality record in such cases in the United States is said to be the highest in the civilized world. We urge that the special duty of each Auxiliary be that of finding the women in the rural sections and taking them to these clinics.

Medicine more than any other science has progressed in the last decade and doctors' wives should keep abreast of modern scientific methods of home making and child care. The modern mother must study child psychology. She must know vitamins from A to G. She must know the comparative merits of different types of kitchen equipment. She must watch vigilantly over the health of her family. Nor does her responsibility end here; she must know to what extent her town is looking after the health of its citizens, if she lives in a town where unsanitary markets or where the water and milk supplies are not protected from contamination. Her own children may obey every rule of health and yet be in danger if they must go to a school where children are not regularly examined and where cases of communicable diseases are not quickly detected. Thus we see the health and happiness of every individual and family is closely bound up with the health and happiness of the community.

In closing, I wish to offer a few suggestions. No matter how efficient and faithful your officers are or how excellent your program, the success of the Auxiliary depends upon the support of the individual members. The Auxiliary has a wonderful opportunity for service, but we must have a clear and definite knowledge of existing health conditions, before undertaking constructive work. First, study local health conditions such as pure water, milk, sanitary markets, ventilation, and lighting of schools and movie houses, recreation facilities, etc. Make a note of the needed improvements, then meet with your health officers and city council and explain why such changes are necessary and request that they be made. Second, prepare educational material that can be passed on to womens' organizations. Preach the gospel of good health; we wish a 100 per cent efficiency not "just to be up and around." Third, whenever possible hold health institutes with the assistance of State Department of Health and also of Education. Our services have been requested by both of these important departments. Much data can be obtained gratis from the Virginia Health Commission and also from the Auxiliary of the A. M. A. Fourth, attend the meetings regularly; if you cannot write a paper, be an appreciative listener; your presence will encourage the President. Fifth, if possible accept cheerfully the work assigned you and always be willing to do your part. Sixth, answer letters promptly; often a postcard is all that is necessary and should be written at once. Nothing delays the work or is more annoying to a busy officer than to have to wait for days for a reply. Seventh, make constructive, not destructive, criticisms—the former are always welcome.

In conclusion, I wish to thank you for the opportunity you have given me to serve the women of Virginia. I also thank you for your cooperation in putting over the various programs. The one thought that comforts a retiring president in the disappointment of leaving an unfinished program is the knowledge that one administration is merely a link in the long chain of Auxiliary activities, and what appears an uncompleted task in one biennial period, may become the nucleus for a larger nobler work in the next administration. Each president must pass on to her successor the flaming torch of truth and experience, for our

Auxiliary is far greater than any individual, greater than any one administration, and its possibilities are infinite.

My last message as your leader is to ask you to pledge with me our unfailing loyalty to our new officers, and to give them our sincere and enthusiastic cooperation in building up a strong Auxiliary to the Medical Society of Virginia.

MARY GRAY HODGES,
Retiring President.

Summary of Minutes of Annual Meeting.

The Woman's Auxiliary to the Medical Society of Virginia held its annual meeting in Richmond, on November 2 and 3, 1932, Mrs. J. Allison Hodges, President, presiding. One hundred and forty-four delegates were registered, the sessions being held in the Hotel John Marshall.

Local arrangements were in charge of a committee of which Mrs. Lee E. Sutton, Jr., President of the Woman's Auxiliary to the Richmond Academy of Medicine, was chairman.

The following resolution was adopted:

RESOLVED 1. That the Woman's Auxiliary to the Medical Society of Virginia expresses its deep regret in the death of its valiant leader, Mrs. Walter Jackson Freeman, President of the National Auxiliary to the American Medical Association, who was to have been with the Auxiliary during this meeting and to whose coming the members had looked forward with great interest;

2. That our deep sympathy be extended the family of Mrs. Freeman;

3. That a copy of this resolution be sent to the family of Mrs. Freeman and that the resolution be spread upon the minutes.

A resolution was adopted expressing regret because of the continued illness of Mrs. W. P. McDowell, President-Elect, necessitating her resignation.

The members of the Auxiliary heard with great interest and enthusiasm two addresses by Mrs. A. Haines Lippincott, of New Jersey, chairman of the Public Relations Committee of the National Woman's Auxiliary to the American Medical Association, who graciously came, on short notice, to fill the vacancy on the program caused by the death of Mrs. Freeman.

The keynote of the meeting was "Healthier Children for our Nation," and interesting messages were brought by the following speakers:

Dr. B. B. Bagby, who commended Dr. Sidney Hall in his plans to revise the curriculum of the public schools to include health education.

Dr. Mary Baughman, who injected a great deal of humor into her presentation of the subject "Correct Posture, Lighting and Ventilation" causing us to laugh at our own defects. The seriousness and importance of correct posture for our children, as well as proper lighting and ventilation at all times were impressed anew upon each one who heard her.

Mrs. Wyndham Blanton, chairman of the Cafeteria Committees of the Richmond School Board, whose subject "Wholesome Food in Proper Amount" was ably handled, appeared next on the program. Her address elicited questions and much discussion.

Miss Claire McCarthy gave a vivid picture of what the Recreation Association is accomplishing in supervision of playgrounds, reclaiming boys who as members of youthful gangs would otherwise become wards of the Juvenile Court, and of the constructive, preventive work that is continually accomplished.

Dr. W. F. Drewry, director of the State Mental Hygiene Bureau, introduced Dr. D. C. Wilson, Professor of Psychiatry at the University of Virginia, whose subject "The Role of Prevention in Behavior Problems," covered a wide range, extending from a resumé of the old, erroneous thought of mental disease as due to some "sin" or "possession" on the part of the individual so suffering, to the modern conception of diseased mentality as a real illness—not at all mysterious in origin, continuance or cure—sometimes due to the very finest qualities and characteristics possessed by an individual.

False ideas of discipline and sex are still prevalent and the speaker stressed the importance of the correct handling of children in difficult situations, saying that our attitude toward the child should be always *helpful* to the child. Sex, as ideally treated, should be stripped of all mystery.

The prevalence and increase of insanity and feeblemindedness were discussed in detail, no satisfactory solution of these problems being presented, though the sterilization law applying to the latter group is carried out in a limited way.

Dr. Southgate Leigh, of the Advisory Committee, was introduced as "the father of this organization." He mentioned briefly the fact that the greatest menace to the medical profession is State Medicine, which means, of course, the practice of medicine by the Government, and urged our using every possible means to organize in such a way that we can be of real assistance in helping the physicians combat this menace.

Dr. J. Allison Hodges, another member of the Advisory Committee, brought greetings to the Auxiliary members and urged that the warning Dr. Leigh had just given concerning the Government's taking over the practice of medicine be heeded by the Auxiliary.

Reports of the various auxiliaries of the State indicated an increased interest, though many counties are still without organization.

The Norfolk County Woman's Auxiliary presented an interesting exhibit.

The social affairs given for the pleasure of the visiting physicians' wives were very enjoyable They included a luncheon at the Country Club, followed by a drive over the city, a visit to Mrs. VanderHoof's garden, a tea at Mrs. Stuart Michaux's, and a tea and bridge party at the new building of the Richmond Academy of Medicine.

The following officers were unanimously elected by acclamation on presentation of the nominating committee's report, there being no nominations from the floor:

President—MRS. WILLIAM LETT HARRIS, 1112 Matoaka St., Norfolk.

President-Elect—MRS. JOSEPH BEAR, 3012 Monument Ave., Richmond.

Vice-Presidents—

MRS. LEE E. SUTTON, 2304 Grove Ave., Richmond.

MRS. MEADE EDMUNDS, Walnut Hill, South Sycamore St., Petersburg.

MRS. M. N. KING, 1314 Westover Ave., Norfolk.

MRS. T. ELMORE JONES, 1032 Leckie St., Portsmouth.

Recording Secretary—MRS. FLETCHER J. WRIGHT, 49 South Market St., Petersburg.

Corresponding Secretary—MRS. CHARLES A. SAUNDERS, 1000 Gates Ave., Norfolk.

Assistant Corresponding Secretary—Miss Emily Allen, Medical Arts Bldg., Norfolk.
Treasurer—Mrs. Reuben F. Simms, 2034 Park Ave., Richmond.
Directors—
Mrs J. Allison Hodges, 5511 Cary St. Road., Richmond.
Mrs. F. W. Upshur, 818 West Franklin St., Richmond.
Mrs. Southgate Leigh, 1020 Ocean View Ave., Norfolk.
Mrs. Stuart McGuire, 2304 Monument Ave., Richmond.
Historian—Mrs. J. Allison Hodges, 5511 Cary St. Road, Richmond.

Laura Ervin Hall,
(Mrs. James K. Hall),
Secretary to 1932 Convention.

Treasurer's Report

Mrs. Reuben F. Simms, Treasurer, gave her report, properly audited, as follows:

Receipts

Amount brought forward	$ 126.83
Auxiliary to the Norfolk County Medical Society (back dues)	1.50
Mrs. G. B. Barrow, Member-At-Large	2.00
Auxiliary to the Norfolk County Medical Society	14.50
Mrs. H. T. Miller, Member-At-Large	1.00
Auxiliary to Richmond Academy of Medicine	20.00
Post-Graduate Medical Auxiliary to Southside Virginia	8.50
Auxiliary to Norfolk County Medical Society	42 50
Total	$ 216.83

Disbursements

Dues to Auxiliary to Southern Medical Association	$ 4.00
Legislative Chairman of State Organization	4.00
Dues to Southern Medical Association	4.00
Dues to the Auxiliary to the American Medical Association	43.50
Postage and Printing	3.00
Dues to the Auxiliary to the American Medical Association	35.50
Total	$ 94.00

Receipts	$ 216.83
Disbursements	94.00
Balance	$ 122.83

This report was placed on file.

Greetings from the New President.

To the Woman's Auxiliary to the Medical Society of Virginia:

You have conferred upon me an honor which I most deeply appreciate; a trust which I revere; a privilege magnificent in its potentialities; and a pleasure unbounded by limitations. And so I thank you for permitting me to serve as your President during the next two years.

Our retiring President and her splendid staff of officers are leaving us a background of worthwhile achievements. With this background and the support and counsel of the capable women whom you have selected to serve with me there is every reason why the next two years shall be most progressive.

You will understand how especially I need the support of every woman in the Auxiliary when I remind you that a few weeks ago your then President-Elect, Mrs. W. P. McDowell, a most capable leader and unusually splendid woman and my dear friend, resigned on account of her critical illness, and I have had the thought consciousness of being your President for only that short time.

I shall appreciate constructive suggestions. It will be a distinct help if the officers will familiarize themselves with the aims and objects of the various State Auxiliaries; if the Chairmen will keep in close touch with the Auxiliaries so that each Chairman will know what is being done throughout the State in her special department; and if the Auxiliaries will call upon the officers and Chairmen for suggestions and make use of materials sent to them.

Every Auxiliary stands for two things, "for mutual improvement and promotion of the public good." I believe our most important work at this time is the forming of new Auxiliaries so that all of the women of the State eligible to membership may have the advantage of these meetings.

We have a common bond of fellowship not found in other women's organizations because our husbands are all of the same profession. As members of this Auxiliary we have a peculiar responsibility of shall I say "Glory"—the glory of diffusing throughout the State the humanitarian program of the one who has given us entré into this organization. If we remember this definite personal responsibility we need have no fear but that some day we shall reach our highest goal. So, during the coming two years let us consecrate ourselves anew to the glorious work of the Woman's Auxiliary in the State of Virginia.

I bid you Godspeed,
Gertrude M. Burges Harris
(Mrs. William Lett Harris.)

Truth About Medicine

In addition to the articles enumerated in our letter of September 24th, the following have been accepted:

Lederle Laboratories
Solution Liver Extract (Lederle) for Oral Use
Parke, Davis & Co.

Diphtheria Toxin Diluted for Schick Test
Diphtheria Toxoid, 30 c.c. vial hospital packages

The following articles have been included with the List of Articles and Brands Accepted by the Council But Not Described in N. N. R. (New and Non-official Remedies, 1932, p. 487):

Smith Oil & Refining Company
Smith's Mineral Oil

NEW AND NON-OFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Pentnucleotide.—The sodium salts of the pentose nucleotides from the ribonucleic acid of yeast. Pentnucleotide is proposed for use in infectious conditions accompanied by a leukopenia or neutropenia, such as agranulocytic angina. It is marketed in the form of Vials Pentnucleotide, 10 c.c. Smith, Kline & French Laboratories, Philadelphia, Pa. (Jour. A. M. A., October 1, 1932, p. 1175).

Scarlet Fever Streptococcus Toxin for Immunization—(National). A scarlet fever streptococcus toxin (New and Non-official Remedies, 1932, p. 381), prepared by the method of Drs. Dick, by license of the Scarlet Fever Committee, Inc. It is marketed in packages of five vials, fifty vials and single vial packages. National Drug Co., Philadelphia.

Scarlet Fever Streptococcus Toxin for the Dick Test—(National).—It is prepared by the method of Drs. Dick, by license of the Scarlet Fever Committee, Inc. (New and Non-official Remedies, 1932, p. 397). The product is marketed in packages of one vial containing sufficient toxin for ten tests and in packages of one vial containing sufficient toxin for one hundred tests. National Drug Co., Philadelphia. (Jour. A. M. A., September 3, 1932, p. 833).

Haliver Oil with Viosterol 250 D—Abbott.—Halibut liver oil, adjusted by addition of maize oil to have a vitamin A potency of not less than 30,000 pharmacopeial units per gram, and by addition of a sufficient amount of viosterol in oil 250 D to assure a vitamin D potency of not less than 250 D. The actions and uses are the same as those of cod liver oil. The product is marketed in the form of soluble gelatin capsules haliver oil with viosterol 250 D—Abbott, 3 minims. Abbott Laboratories, North Chicago.

Parke-Davis Haliver Oil with Viosterol—250 D.—Halibut liver oil, adjusted by addition of maize oil to have a vitamin A potency of not less than 30,000 pharmacopeial units per gram and by addition of a sufficient amount of viosterol in oil 250 D to assure a vitamin D potency of not less than 250 D. The actions and uses are the same as those of cod liver oil. The product is supplied in the form of soluble gelatin capsules Parke-Davis haliver oil with viosterol—250 D, 3 minims. Parke, Davis & Co., Detroit.

Normal Horse Serum.—This product (New and Non-official Remedies, 1932, p. 357, is also marketed in 30 c.c. vial packages. Lederle Laboratories, Inc., Pearl River, N. Y. (Jour. A. M. A., September 17, 1932, p. 996).

Solution Dial-Ciba with Urethane, Sterile Ampules, 1.1 c.c.—Each cubic centimeter contains Dial-Ciba (New and Non-official Remedies, 1932, p. 83), 0.1 Gm. (1½ grains), ethyl carbamate (urethane) 0.4 Gm. (6 grains), monoethylurea 0.4 Gm. (6 grains) and water q.s. The actions and uses are the same as those for Dial-Ciba. It is proposed for intramuscular administration and, only when pressing emergency exists, for intravenous injection. Ciba Co., Inc., New York.

Solution Dial-Ciba with Urethane, Sterile Ampules, 2.3 c.c.—Each cubic centimeter contains Dial-Ciba (New and Non-official Remedies, 1932, p. 83), 0.1 Gm. (1½ grains), ethyl carbamate (urethane) 0.4 Gm. (6 grains), monoethylurea 0.4 Gm. (6 grains) and water q.s. The actions and uses are the same as those for Dial-Ciba. It is proposed for intramuscular administration and, only when pressing emergency exists, for intravenous injection. Ciba Co., Inc., New York.

Tablets Chiniofon—Searle Enteric Coated, 0.25 Gm. (4 grains). Each tablet contains Chiniofon—Searle (New and Non-official Remedies, 1932, p. 125), 0.25 Gm. (4 grains), coated with phenyl salicylate. G. D. Searle & Co., Chicago.

Typhoid Vaccine (Immunizing).—This product (New and Non-official Remedies, 1932, p. 392), is also marketed in packages of one 5 c.c. vial and in packages of one 20 c.c. vial, containing 1,000 million killed typhoid bacilli per cubic centimater. E. R. Squibb & Sons, New York.

Tetanus-Perfringens Antitoxin.—An antitoxic serum (New and Non-official Remedies, 1932, p. 359), prepared by immunizing horses individually against the toxins of B. tetani and B. perfringens (B. welchii). This product is marketed in packages of one vial containing 1,500 units of tetanus antitoxin and 1,000 units of perfringens antitoxin; and in packages of one syringe containing 1,500 units of tetanus antitoxin and 1,000 units of perfringens antitoxin. The National Drug Co., Philadelphia. (Jour. A. M. A., September 24, 1932, p. 1085).

Book Announcements

Synopsis of Gynecology. Based on the Textbook Diseases of Women. By HARRY STURGEON CROSSEN, M. D., F. A. C. S., Professor of Clinical Gynecology, Washington University Medical School, and Gynecologist in Chief to the Barnes Hospital and the Washington University Dispensary, etc. And ROBERT JAMES CROSSEN, M. D., Instructor in Clinical Gynecology and Obstetrics, Washington University School of Medicine, etc. So. Louis. The C. V. Mosby Company, 1932, 12mo. of 227 pages. 110 illustrations. Leatherette. Price, $2.75.

Clinical Gynecology. By C. JEFF MILLER, M. D., Professor of Gynecology, Tulane University School of Medicine; Chief of the Department of Gynecology of Touro Infirmary, etc. St. Louis. The C. V. Mosby Company. 1932. Octavo of 560 pages. Illustrated. Cloth. Price, $10.00.

Ethnographical Survey of the Miskito and Sumu Indians of Honduras and Nicarague. By EDWARD CONZEMIUS. Smithsonian Institution. Bureau of American Ethnology. Bulletin 106. United States Government Printing Office. Washington. 1932. Octavo of 191-vii pages. Illustrated. Paper. For sale by the Superintendent of Documents, Washington, D. C. Price, 25 cents.

The Rockefeller Foundation. Annual Report. 1931. The Rockefeller Foundation. 61 Broadway, New York. Octavo of 420-viii pages. Illustrated. Paper.

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Editorial

Our New President.

There was a delightful charm in the complete surprise with which Dr. Flippin was taken by his selection as president-elect at the Roanoke meeting. Quite unaware that any plan was afoot to propose his name for this high position, he, like Cincinnatus of old, had to be summoned to office literally from the field: the Roman, it is true, from the plow; he, the modern, from the niblick. Yet a wiser or more deserved choice could not have been made.

James Carroll Flippin was born in Lunenburg, January 26, 1878, the son of John James and Lucy Haskins Flippin. His preliminary education was received in Danville where the years of boyhood and early life were spent. He originally chose business for a vocation. To this end, he worked some five years at the Riverside Cotton Mills following a period of business training in the North.

Fortunately the market place did not yield him the anticipated satisfactions. Deciding ultimately upon medicine as a career, he entered the University of Virginia for academic and medical training and was awarded his M. D. degree in June, 1901. During his senior medical year, he acted as student assistant in histology and embryology. The influence of Prof. Albert Tuttle, the head of this department, in no small measure directed his interest to teaching as a life work.

An instructorship in histology, embryology and pathology rather fully occupied his time for the three years immediately following graduation. In 1904 he was temporarily lured away from teaching and was filling an internship at the Union Protestant Hospital in Baltimore when recalled to the University in the capacity of adjunct professor of bacteriology. This course he conducted for the next two years while continuing to assist with the subjects previously taught.

Vacations usually found him at post-graduate study. Three summers were spent in Boston: one at Harvard in biochemistry, one with Dr. Mallory in pathology, one with Dr. Richard Cabot in the dispensary of the Massachusetts General Hospital. Another summer was devoted to surgical pathology at Dr. Bloodgood's laboratory in Baltimore. Some time later he studied for four months at Romberg's clinic in Tübingen, Germany.

His appointment as adjunct professor of clinical medicine and university physician in 1906 signalized the diversion of his prime interest from the laboratory to the clinic. The new duties included ward and dispensary teaching, instruction of third-year students in laboratory diagnosis, didactic lectures on therapeutics for fourth-year students, along with care of the health of the University student body. Full professorship of clinical medicine followed in 1911. He became head of the department of internal medicine in 1928 upon the resignation of Dr. John Staige Davis, a beloved former president of this Society. Additional administrative responsibilities were

placed upon him in 1924 after the death of Dr. Theodore Hough. Promptly selected as acting dean, he has served as dean of the Medical School since 1927.

This bare outline records an active life for thirty years after graduation yet one of relative seclusion within academic walls and without dramatic incidents for the adornment of a biographical tale. Those familiar with the development of the Medical School of the University during this span will read between the lines a story of unstinted devotion and service. No outline can record his singular expenditure of time, energy and thought on the problems of the Medical Schools as it changed from the didactic institution of 1901, with few or no clinical facilities, to the one of today, housing, as it does under one roof, ample quarters and equipment for the preclinical branches as well as a 300 bed hospital and large dispensary. His contribution to this transition was a major one and is so recognized by his colleagues. The results of his labors are evidenced in its consummation rather than in an extensive bibliography or a long list of society memberships.

J. CARROLL FLIPPIN, M. D.,
President, Medical Society of Virginia.

Dr. Flippin has been notably successful as a teacher. His presentation of a subject is characterized by clarity, thoroughness and those thought-provoking qualities of such value for the medical student. He is seen at his best at the bedside surrounded by a group of pupils and assistants. Separating for them the essential from the non-essential in a difficult case, sympathetic with their medical immaturity but a hard critic of sloppy thinking, alive to the bearing of the recent advances yet withal thoroughly practical, he makes an indelible impression on their minds and his mark is treasured by many student generations.

Naturally he is in much demand as a consultant. As is true of so many good clinicians, his keenness in diagnosis is based on the well-joined foundation of years of hard work in the laboratory, dead house and wards. No doubt from the same source comes a saneness in therapy that gives only merited heed to the therapeutic fads and fashions of the day.

Administrative duties have consumed much of his time in late years. Here the ability and habit to think questions through has compelled attention and permitted the correlation of divergent views for a common end. Needless to say, this has required the exhibition of that measure of conciliation and tact, that knowledge of human nature, so essential to the solution of difficult administrative problems.

Dr. Flippin has always taken a lively interest in the affairs of the Medical Society of Virginia and its smaller component groupings in his own and other regions. His contributions to the scientific programs, notably in various symposia, have impressed one by their orderly and logical elucidation of well considered conclusions. He has been a leader in the movement for post-graduate instruction throughout the Society since the inception of this plan. His elevation to the presidency affords increased opportunity for his talents in the field of medical education and administration. Possessing, in rare balance, the traits of the successful teacher, the gifted clinician and the experienced administrator, he is eminently qualified to carry forward the program of his distinguished predecessors toward fulfilling the Society's dedication to service for the State and the profession.

J. H. N.

Oxygen Therapy.

Oxygen has held a place in medical therapy for many years. Its administration in the early part of the twentieth century was attempted but soon proved to be wanting in favorable results. In the early days of its therapeutic application, no widespread adoption of it was attained. The chief employment of oxygen at this period was associated with chloroform and

ether anesthesia. The revival of alarmingly ill patients, bordering on death, by the inhalation of oxygen, seemed to bring forth an attempt to resort to it frequently in cases of impending death from other causes. Such use of oxygen at the death scene was recognized by frank observing physicians as wanting in any measurable advantage to the patient. It rarely appeared to retard the progress of untoward symptoms. It finally became rather widely considered to be of no real value in many such cases when death appeared through the corridor of terminating pathologic processes. Always, however, in the operating room the oxygen tank has enjoyed a prominent place in the therapeutic set-up of emergency appliances for restoration of those threatened by extinction of life. Possessing, therefore, a real place in this domain, as its successful use has demonstrated, it has never completely lost in favor.

For the past ten years or more, oxygen has passed through a sort of probation in a wider field of therapeutic use. Especially within the past five years, it has more and more received consideration as an agent of useful value in certain serious disease conditions. In view of this fact, it would seem that a review of oxygen therapy would be useful, especially as its greatest usefulness seems to have been found to be in the treatment of pneumonia. Through the favorable results in combating noxious symptoms of this disease, manufacturers have developed, within recent years, apparatus for its employment at the bedside, in the hospital and in the home. Many physicians have been using oxygen.

Purpose of Oxygen Therapy

Editorial comment leans on Potts'* paper, with its reference list in considering this question. Readers are directed to this paper for a more detailed resume of the general subject. The purpose of oxygen therapy, of course, is to overcome or combat anoxemia. Anoxemia is a deficient aeration of the blood or a deficiency in oxygen content of the blood. Sometimes this condition has been termed "oxygen-want." For practical purposes, at the bedside, anoxemia and cyanosis may be employed to denote the state of "oxygen-want" of the blood. It is not actually true but for practical use one may rely upon the degree of cyanosis to be the index of anoxemia and so be the criterion in the employment of oxygen. In pneumonia cyanosis, Potts quoting Stadie notes a definite relationship in pneumonia between the degree of cyanosis and the per cent of arterial unsaturation. Cyanosis shows best under the nail, next over the entire end of the finger, and next over the face. Variations occur but the nail is the site to be watched, as the one disclosing the earliest shade of cyanosis and, hence, anoxemia. Anoxemia, according to Cannon, quoted by Potts, produces toxic changes in vital neural cells and these changes are prevented by the early use of oxygen.

In a patient gradually developing an anoxemic state, the intelligence and senses become dulled, and headache, depression, apathy, drowsiness and general loss of self-control appear. Sensibility is impaired and pain is dulled. Hearing seems the last sense to be deadened. Delirium may ensue and, in pneumonia patients, this factor is a part of the origin of delirium, it must be remembered. In modern aviation, coursing through elevations of the upper highways and even in recent ventures in the penetration of stratosphere, these effects are worth noting.

Physiology in Oxygen Inhalations

Hemoglobin carries oxygen in the blood. This is a highly complex iron compound of protein and it appears that one atom of iron combines with two atoms of oxygen. Different partial pressures of oxygen influence this taking up and giving off of O_2 in the animal body. In the blood of the alveolar there is 100 m.m. Hg. and in the muscle there is 19 to 20 m.m. Hg. of pressure. Oxygen in its passage from the alveolar air to the hemoglobin and from the hemoglobin to the tissues, is, writes MacLeod, transmitted in solution through the plasma. Now, since the tissues when active use oxygen rapidly, oxygen tension in the plasma is favorable to the release of oxygen from the hemoglobin, thus maintaining plasma-oxygen tension in order to meet the needs of tissue oxidation—skeletal muscle, heart muscle, glands, and the blood itself.

A person in bed requires about 15 to 18 c.c. of oxygen per breath. The air contains only about 21 per cent of oxygen. The tidal air is about 500 c.c. and so about one-fifth of available oxygen is used, notes Potts. Of course, in states of tissue waste and fever, oxidation is far more rapid and the requirements of oxygen

*Oxygen Therapy, American Journal of Medical Sciences, November, 1932, page 616.

far greater. Such a condition exists in pneumonia, with its fever, its rapid heart beats, its inflammatory encroachments in available alveolar space. To meet this situation, oxygen inhalations by especially devised tent-enclosures and other devices, have been employed with favorable effect on cyanosis and anoxemia. Shallow breath and rapid breathing have been relieved by its use. Apparent help has been offered to conditions of alveolar function. Improvement has been noted in lung aeration. More salutary and normal circulatory signs have been observed in the patients. Vital brain functions have been noted as improved under the influence of oxygen therapy.

Potts sets forth in a paragraph, a refutation of dangers from over-dosage of oxygen. Blood fully saturated may be subjected to too much oxygen, but in disease there is a markedly unsaturated state of oxygen content on hemoglobin as well as abnormal alveolar membrane. Anoxemic individuals, says Potts, exposed to atmospheres of from 40 to 60 per cent oxygen, have received oxygen for as long as two months without untoward effects. Potts calls attention to the danger accruing to patients with a chronic anoxemia who have been accustomed to certain oxygen therapy, when withdrawn from it. As to dosage for the general use of oxygen therapy, it may be said to be from 40 to 60 per cent, a method that furnishes to the patient a supply of 30 per cent concentration. Employment of the nasal catheter furnished up to 35 per cent, says Potts. Keeping the finger nails pink, slowing the pulse and breathing, and improving the mental state, offers one a group of symptoms to be sought for and maintained in the employment of oxygen therapy in pneumonia and heart disease. A. G. B.

Medicine in Virginia in the Eighteenth Century.

Members of the Medical Society of Virginia may share with the author, Dr. Wyndham B. Blanton, a pardonable sense of pride in reviews the work has received at the hands of medical journals of the country. The reception accorded this contribution to the medical history of Virginia in its colonial period is highly significant of the interest felt in such matters by doctors everywhere. Readers will find illustration of the favorable comment in the following review by the *American Journal of Medical Sciences.* In the November number, one finds this comment:

To the author's former book, *Virginia Medicine in the Seventeenth Century* (Am. J. Med. Sci., 1930, 180, 715), is now added this larger work covering a period when the Old Dominion was not only in the heyday of her glory, but was *facile princeps* in intellect, wealth and prominence on this continent. A century which put the colonies well on the road to prosperity and developed a galaxy of brilliant minds relatively unequalled at that period or since was bound to have its interesting medical side. This the author has captured for us both in detail and in spirit. Though quacks were all too common, as indeed they always have been in this gullible land, men of high standards and ability were numerous in the profession and the habit of going abroad for one's education was in full swing. Even those who followed the apprentice system carried it out so thoroughly that much more of the available knowledge of the time was acquired by the intelligent student than is possible today.

The author, well versed in his subject, by correlating Virginia medicine with that of Europe and the other colonies, greatly widens the interest of his work to the reader. In the eighteen chapters, not only are medicine, surgery and obstetrics depicted in some detail, but the related subjects of pharmacy, dentistry, nursing and botany receive understanding treatment. Especially interesting is the chapter on Jefferson and William Byrd, of Westover, as examples of eighteenth century useful amateur scientists in medicine, while the chapter on Washington's last illness is of peculiar appropriateness at this time. Biographies of physicians in various Virginia towns and counties, while of more restricted interest, add to the value of the book as an historical record. The Historical Committee of the Medical Society of Virginia, of which the author is a member, is to be heartily congratulated on this concrete example of their activities.—E. K.

It is hoped that every Virginia doctor will avail himself of the present opportunity to secure a copy of this historical work. The edition is limited. A. G. B.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Greetings from New Chairman.

To the Medical Profession of Virginia:

As chairman of the Department of Clinical Education of the Medical Society of Virginia for the coming year, I would say that this very important phase of the work of the Society will be continued along the lines that have been developed during the two preceding

years. That is, this department will endeavor to cooperate with local and component societies in providing post-graduate instruction to groups of physicians wherever this idea is acceptable to them. As to plans and methods to be used—this will be worked out between the local societies and the various committees representing the Department of Clinical Education.

It seems from the experience of the past two years, that this bids fair to develop into one of the most progressive movements to insure post-graduate instruction to practitioners of medicine that has ever been undertaken by a medical society. It deserves the whole-hearted support of every doctor in the State and is the most effective way to stay the advance of State and Federal medicine in their encroachment on private practitioners.

Again I would ask for the whole-hearted cooperation of every doctor and component society of the State in carrying on this work.

R. D. Bates, M. D.,
Chairman.

Speakers for Society Meetings.

The Department of Clinical Education continues its work of assisting in arranging scientific programs. Under its auspices three members of the faculty of the Medical College of ginia. Drs. Asa Shield, E. H. Terrell and W. A. McGee, addressed the meeting of the Clinch Valley Medical Society at Norton on October 22nd. Dr. J. B. Bullard, who was to have made a fourth in the visiting party, was unfortunately prevented by illness.

At the request of Dr. P. W. Miles, secretary of the Danville-Pittsylvania Academy of Medicine, the Department obtained the services of Dr. Lee E. Sutton, Jr., of Richmond, and Dr. J. Edwin Wood, of Charlottesville, for addresses to the Academy at its meetings on December 13th and February 14th.

First Move Towards Pediatrics Courses.

The fact that eighty-nine of the physicians enrolled in the first circuits of post-graduate classes in prenatal and postnatal care expressed a desire for similar courses in other subjects, as against six who said they would not be interested, and that thirty-four of them indicated pediatrics as the preferred subject of study, has led interested members of the Virginia Pediatric Society to inquire as to whether this demand does not present an opportunity which their orgnaization can seek to fill. They are attempting to make tentative plans for submission to the Department of Clinical Education as a method for offering intensive post-graduate study in pediatrics.

Joint Committee's Program Continued.

The Joint Committee on Prenatal and Postnatal Instruction, having reported the results of six months' work to the House of Delegates in Richmond and having been authorized to continue its work through two years, began its third circuit of courses in Roanoke and adjacent points in the week of November 7th. The enrollment of fifty-one for the first two weeks is considerably smaller than in either of the two previous circuits, but there are at least three encouraging features: (1) The five centers had the benefit of the most complete organization yet effected in a circuit; (2) the classes were practically self-organized, the amount of travel by the Joint Committee's agents (and consequently the cost of organization) being sharply reduced; and (3) in most of the centers the enrollment presents a case of practically "all present or accounted for," with a higher proportion of physicians engaged in this branch of practice attending than in previous circuits.

Data in regard to the first two meetings of the new classes are as follows:

Wytheville: The class meets on Mondays at 7:30 P. M. in the Town Hall. Enrollments: Drs. M. B. Caldwell, E. M. Chitwood, C. F. Graham, A. B. Grubb, J. M. Miller, C. D. Moore, J. F. Repass and A. B. Woolwine. Committees: Drs. Miller and Moore, on membership; Drs. Gannaway and Graham, on clinical material.

Galax: The class meets on Tuesdays at 7:30 P. M. in Galax Hospital. Enrollments: Drs. J. H. Caldwell, V. O. Choate, J. Coates, J. G. Cox, B. F. Eckles, R. R. Goad, R. H. Harrington and C. B. Nuckolls. Visitor: Dr. Z. G. Phipps. Committees: Dr. Choate, on membership; Dr. Coates, on clinical material.

Roanoke: The class meets on Wednesdays at 11:00 A. M. in Roanoke Hospital. Enrollments: Drs. John O. Boyd, S. G. Davidson, A. C. Davis, F. A. Farmer, E. F. Flora, R. H. Garthright, A. M. Groseclose, G. S. Hurt, Ira Hurt, E. C. Jamison, J. W. Preston, W. C. Stephenson, Alvah Stone, E. O. Tinsley. Visitors: Drs. L. M. Abbott, Escue, G. W. Hooker, G. A. L. Kolmer, L. G. Richards, R. M. Wiley. Committee: Drs. G. S. Hurt, Boyd, Groseclose, Stone and Wiley.

Christiansburg: The class meets on Thurs-

days at 2:30 P. M. in Altamont Hospital. Enrollments: Drs. F. C. Bedsaul, T. H. Clarke, J. G. Davis, Jr., R. M. DeHart, J. L. Early, M. B. Linkous, W. K. Lloyd, C. F. Manges, S. H. Nixon, J. H. Noblin, A. M. Showalter and F. Yeatts. Committees: Dr. Davis, on membership; Drs. Lloyd, Early, Manges and DeHart, on clinical material.

Pulaski: The class meets on Fridays at 3:00 P. M. in Pulaski Hospital. Enrollments: Drs. Hugh B. Brown, D. S. Divers, S. C. Draper, H. R. Farley, J. B. Millard, W. I. Owens, D. B. Stuart, R. F. Thornhill and R. H. Woolling. Committee on clinical material, Dr. Woolling.

Fourth Circuit Opens in January.

A committee appointed by Dr. Joseph D. Collins, President of the Norfolk County Medical Society, under the chairmanship of Dr. C. J. Andrews, is actively engaged in organizing a post-graduate course in prenatal and postnatal care in Norfolk, the central city of the fourth circuit to begin the last week in January. The number of physicians who will probably be interested is approximately 100, so that there is encouraging prospect of large and animated groups in both Norfolk and Portsmouth.

In addition, the Negro physicians of the Tidewater Medical Society have applied through Dr. G. Hamilton-Francis, President of their National Medical Association, for a class and backed up the application with a dozen advance enrollments. The Joint Committee is favorable to the organization of classes for colored doctors when no conflict occurs. Since the tentative schedule for the fourth circuit has an opening for such a class and since the leaders of the Norfolk County Society approve it, a group will in all likelihood be formed for the benefit of these enthusiastic Negro practitioners.

Societies Endorse Joint Committee's Program.

Continuing its policy of reporting upon its work to all local societies wishing such a discussion, the program of instruction in prenatal and postnatal care was presented on October 24th, 25th and 27th to the Warwick County, the Mid-Tidewater and the Northern Neck Medical Societies. Discussion and votes were deferred by the first-named organizations until more time was available. The Northern Neck Society unanimously endorsed the courses and invited the Joint Committee to establish a class in its territory.

Arrangements have been made at this writing for representatives of the Joint Committee to speak at forthcoming meetings of the South Piedmont, Southside Virginia and Danville-Pittsylvania societies.

Similar arrangements will be gladly made for any other medical organizations in the State.

G. W. Eutsler,
Secretary.

Proceedings of Societies

Southwestern Virginia Medical Society.

The semi-annual meeting of this Society was held in Roanoke, September 20th and 21st, under the presidency of Dr. G. A. Wright, of Marion, and with Dr. A. M. Showalter, of Christiansburg, at the secretary's desk. The scientific program was interesting as usual. Drs. J. K. Gray, Marion, and Fred F. Oast, Roanoke, were admitted to membership and the following officers were elected for the coming year: President, Dr. J. A. Noblin, East Radford; vice-president, Dr. E. M. Chitwood, Wytheville; secretary-treasurer, Dr. Harry W. Bachman, Bristol, Va. The next meeting will be held in the early Spring of 1933.

The Northern Neck Medical Association

Held its regular semi-annual session at Montross, Va., October 27th, with about thirty doctors in attendance.

Dr. Samuel Downing, formerly of Lancaster County, now of Newport News, Va., retiring president, called the meeting to order. The following officers were elected: President, Dr. W. N. Chinn, Hague; vice-presendent, Dr. H. L. Segar, Warsaw; and secretary-treasurer, Dr. R. E. Booker (re-elected), Lottsburg.

There were a number of physicians present from Fredericksburg, Newport News, and Richmond. Several scientific papers were read and many interesting cases reported.

Two entertainment features marked the day's program—an oyster roast at noon, served on the lawn of the old Westmoreland Tavern, and a banquet at the Tavern that evening.

R. E. Booker,
Secretary.

The Mid-Tidewater Medical Society

Held its regular meeting at Millers Tavern, Va., October 25th, with the president, Dr. R. D. Bates, presiding. Mr. George Eutsler was present and presented the plans of the Joint Committee on Prenatal and Postnatal Instruction. After some discussion, the Society moved to rest the question for three months until the members could study the matter more fully.

Delegates to the State meeting were elected and urged to attend.

The following officers were elected for the next year: President, Dr. Blair Spencer, Gloucester; president-elect, Dr. R. R. Hoskins, Mathews; vice-presidents (one from each county), Drs. E. T. Sandberg, Cardinal; H. A. Tabb, Gloucester; Wm. Gwathmey, Ruark; R. D. Bates, Newtown; Wm. E. Croxton, West Point; L. O. Powell, Seaford; J. R. Parker, Providence Forge, and Clarence Campbell, Sparta; treasurer, Dr. Jas. D. Clements, Ordinary, and secretary, Dr. M. H. Harris, West Point (re-elected).

Case reports, illustrative of cancer studies, were given by Drs. R. D. Bates and J. N. DeShazo. Dr. Wright Clarkson presented a paper on "Precancerous Conditions and Their Treatment." A general discussion followed.

A delightful luncheon was served by the local members to the physicians present.

The next meeting of this society will be held in West Point on the fourth Tuesday in January, 1933.

The Fairfax County Medical Society

Held its regular meeting at Fairfax, Va., on October 27th, with Dr. William P. Caton, Accotink, presiding, and Dr. A. L. Carson, Jr., of Fairfax, at the secretary's desk. Dr. F. M. Brooks, Fairfax Station, presented a very interesting report of an obstetrical case, and Dr. A. L. Carson, Jr., read a paper on "Postpartum Care." This was discussed at length by many of the members present. Dr. B. F. Phillips, Triangle, Va., was elected to membership. The secretary was instructed to make arrangements for the showing of the Canti Cancer Film at the next meeting.

Roanoke Academy of Medicine.

At a meeting of the Academy, on the evening of November 7th, a symposium was held on tuberculosis in children.

The following papers were presented:

"Pulmonary Tuberculosis." Dr. L. R. Broome.

"Tuberculosis of the G. U. Tract." Dr. W. W. S. Butler, Jr.

"Extra-Pulmonary Childhood Tuberculosis," Dr. J. M. Bishop.

Dr. E. O. Tinsley, Air Point, Va., and Dr. C. T. Burton, Roanoke, Va., were elected to membership.

Dr. Frank A. Farmer, Roanoke, is president, and Dr. C. H. Peterson, also of Roanoke, secretary-treasurer.

The Clinch Valley Medical Society

Held its semi-annual meeting at Norton, Va., October 22nd, under the presidency of Dr. Frank Pyott, of Tip Top, who gave a short address at the morning session. At this session, delegates to the Medical Society of Virginia were elected from the various counties composing the society, and the following officers were elected for the ensuing year: President, Dr. G. B. Setzler, Pennington Gap; vice-presidents, Dr. W. R. Culbertson, Norton, and Dr. V. W. Quillen, Nickelsville; secretary-treasurer, Dr. C. B. Bowyer (re-elected), Stonega.

At the afternoon session the following program, arranged through the Department of Clinical Education of the Medical Society of Virginia, was presented:

Neurological Disorders by Dr. J. A. Shield, Richmond.

Hemorrhoids by Dr. E. H. Terrell, Richmond.

Allergy by Dr. J. B. Bullard, Richmond.

Diagnosis and Treatment of Pertussis by Dr. W. Ambrose McGee, Richmond.

The next meeting of this Society will also be held at Norton, Va.

News Notes

A Successful Meeting.

The meeting of the State Society in Richmond, the first three days in November, was interesting and pleasant. The opening session on Tuesday evening was held in the ballroom of the John Marshall Hotel, so as to accommodate the large audience composed of laymen as well as members and their wives. All other sessions were held in the handsome new home of the Richmond Academy of Medicine, which building also houses the State Society's office. This was an excellent setting for the scientific and business sessions, as the Medical College of Virginia offered space for the scientific and commercial exhibits in their Library building, which is an adjoining unit of the Academy building. There were a larger number of both exhibits this year than usual and they received a great deal of favorable comment. Clinics on the first afternoon were held in the historic "Egyptian" building of the Medical College of Virginia and a large number of members arrived in time to attend these. Dr. Robert B. Osgood, Boston, one of the invited guests, held a clinic on "Chronic Arthritis," and spoke on that subject at the opening session. Dr. William Minor Dabney, Ruxton, Md., spoke on "A Third of a Century of Medical Education in the United States."

A great deal of interest was manifested in the various sessions and other features by upper classmen from the Medical College of Virginia, resident physicians from the various hospitals, as well as members, of whom there was a registered attendance of nearly five hundred. Dr. J. Powell Williams and his able corps of assistants were always "on the job" and to them is due great credit for the success of this meeting.

The Society adopted a resolution expressing their opposition to the building of new veterans' hospitals by the Federal government and urging that civilian hospitals be utilized for this purpose.

Dr. J. Carroll Flippin, University, succeeded to the presidency and Dr. R. D. Bates, Newtown, was named president-elect. The vice-presidents are: Drs. F. H. Smith, Abingdon; James R. Gorman, Lynchburg; and R. L. Page, Batesville. Place and date for our next annual meeting are to be named by the Council at its winter meeting.

A full report of the general and business sessions of the Society, incorporating all reports presented, will be found in this issue of the Monthly.

There were about thirty doctors playing in the golf tournament held on the morning of the first day of the meeting. Due to the inclement weather, this was an 18 rather than a 36-hole tournament. The silver cups presented at the evening session were to Dr. John B. Bullard, Richmond, for low gross score, and to Dr. Paul Davis, Roanoke, for low net score.

Several very pleasant and attractive entertainments were enjoyed by the ladies who came with their husbands. These are reported in the summary of minutes of the Woman's Auxiliary in their regular department in this issue.

The Virginia Pediatric Society

Held its annual meeting on November 2, 1932, at the Westmoreland Club, Richmond, Va., under the presidency of Dr. St. Geo. T. Grinnan, Richmond, and with Dr. James B. Stone as secretary. Dr. Fred J. Wampler, the invited guest, read a paper on Osteomalacia, and illustrated his talk with his moving pictures of women and children suffering from this condition, who had come under his observation during his work in China.

Dr. F. D. Wilson, Chairman of the Pediatric Society's Child Welfare Committee, read a paper reviewing the present status of Child Welfare work in Virginia and the activities of the various organizations engaged in its promotion.

There was considerable discussion as to how the Pediatric Society could more effectively help in the cause of child welfare, and the following resolutions were adopted:

Whereas, The State Department of Education is now revising its courses of study in order that it may better fit the pupils for the ordinary affairs of life, the Virginia Pediatric Society, assembled in Richmond, Va., on November 2, 1932,

Resolved,

1. That this Society commend the State Department of Education for this ideal.

2. That we offer the assistance of the

Pediatric Society in the development of this plan.

3. That we designate the Child Welfare Committee of this organization to cooperate with the State Department of Education in this endeavor.

4. That each member of this organization will offer his assistance to the local educational society in the promotion of this project.

The Society considered the question of independently sponsoring pediatric clinics throughout the State, but it was decided that more effective work could be done through cooperation with the Department of Clinical Education of the Medical Society of Virginia.

There was some discussion of the advisability of the society endeavoring to have school credits given to the "Five Point Child" with the object of stimulating interest in and further emphasizing the importance of the child's health. The subject was referred to a committee for consideration.

The following officers were elected for the ensuing year: President, Dr. James B. Stone, Richmond: vice-president, Dr. Roger H. DuBose, Roanoke; and secretary-treasurer, Dr. Thomas D. Jones, Richmond.

New Member of State Board of Medical Examiners.

Dr. J. H. Ayres, Accomac, Va., has tendered his resignation as a member of the Virginia State Board of Medical Examiners and Governor Pollard has appointed Dr. R. D. Bates, of Newtown, to fill the vacancy for the unexpired term of four years, ending April 1, 1934.

American College of Surgeons.

At the twenty-second annual Clinical Congress of the American College of Surgeons held in St. Louis, October 17th-21st, the following officers were elected: President, Dr. William D. Haggard, Nashville, Tenn.; vice-presidents, Drs. Evarts Ambrose Graham, St. Louis, and Alexander R. Munroe, Edmonton, Alberta. Dr. Franklin H. Martin, Chicago, holds over as director-general, and Dr. Frederic A. Besley, Waukegan, Ill., as treasurer.

There were 633 doctors upon whom Fellowship was conferred at this meeting. The following are from Virginia:

Dr. Horace G. Ashburn, Norfolk.
Dr. Lawrence O. Crumpler, Danville.
Dr. Samuel Downing, Newport News.
Dr. Frank M. Leech, Lexington.
Dr. Waverly R. Payne, Newport News.
Dr. James W. Sayre, Newport News.
Dr. Henry H. Wescott, Roanoke.

Two Honorary Fellowships were also conferred.

The 1933 meeting of the College will be held in Chicago, October 9th-13th.

The Seaboard Medical Association of Virginia and North Carolina

Is to hold its thirty-seventh annual meeting at Rocky Mount, N. C., December 6th, 7th and 8th, with headquarters at Hotel Ricks. A large number of scientific papers on a variety of interesting subjects will be presented at the various sessions and several attractive entertainments have been arranged. A good time is assured for all who attend. Dr. Edmund S. Boice, Rocky Mount, N. C., is president, and Dr. Clarence Porter Jones, Newport News, Va., secretary.

News Notes, Medical College of Virginia.

Dr. Joseph L. Miller, a noted internist, and editor of the *Archives of Internal Medicine*, and Professor of Clinical Medicine at the University of Chicago, lectured to the senior and junior medical students on October 26th.

Dean Wortley F. Rudd and Dr. W. G. Crockett, Professor of Pharmacy, of the School of Pharmacy, attended a meeting of District 1 of the Virginia Pharmaceutical Association, at Luray, October 26th. The meeting was under the presidency of Mr. E. P. Berlin, of Burkeville, who is an alumnus of the School of Pharmacy of the college. Doctor Crockett read a paper on "Patent Medicine Quacks."

Both the pathological museum and the dental museum have been given new quarters in the main reading room of the old library space which was provided in McGuire Hall. This space became vacant when the new library was opened in September.

Dean R. C. Wilson, University of Georgia School of Pharmacy, and Dr. H. K. Pancoast, University of Pennsylvania, were recent visitors to the college.

Recent visitors to the college were Dr. Joseph T. Peters, classs of '27, and Dr. Yates S. Palmer, class of '31. Dr. Frank Hancock, one of our oldest living alumni, graduate of the University College of Medicine in 1896, ex-

pressed himself as quite pleased with the rapid strides the college has made in recent years.

Dr. William T. Sanger, president, and Dr. Lee E. Sutton, Jr., Dean of the School of Medicine, attended the meeting of the Association of American Medical Colleges, in Philadelphia, November 14th-16th.

Dr. William B. Porter and Dr. Fred J. Wampler attended the meeting of the Southern Medical Association at Birmingham, Alabama, the week of November 14th. Dr. Porter was vice-chairman of the medical section and Dr. Wampler gave an exhibit of intestinal parasites.

News from University of Virginia, Department of Medicine.

Dr. Kenneth Maxcy attended the meetings of the American Public Health Association in Washington on October 24th to 26th.

Dr. Lawrence T. Royster conducted an Institute of Pediatrics at the Community Center in Farmville on the afternoon and evening of October 28th.

Dr. E. P. Lehman was elected Chairman of the Section on Surgery of the Southern Medical Association during the recent meeting in Birmingham, Ala.

The meeting of the University of Virginia Medical Society on November 21st was addressed by Dr. W. Ambrose McGee of Richmond, Va., on the subject of The Schilling Hemogram.

News from the Duke University School of Medicine and Duke Hospital.

The following clinics have been given at the Duke Hospital:

October 22nd, Dr. A. B. Moore, Radiologist from Washington, D. C.; subject, "Gastro-Intestinal Diagnoses."

October 31st, Dr. Robert B. Osgood, Professor Emeritus of Orthopedic Surgery, Harvard School of Medicine; subject, "Arthritis."

November 5th, Dr. Norman T. Kirk, Chief of the Orthopedic Section, Walter Reed General Hospital, Washington, D. C.; subject, "Amputation."

November 12th, Dr. Carl Ten Broeck, Director of the Division of Plant and Animal Pathology, The Rockefeller Institute for Medical Research, Princeton, N. J.; subject, "Symbiosis Between a Virus and a Bacillus in Influenza in Hogs."

On November 5th, the North Carolina Pediatric Society held a meeting at the Duke Hospital and, at the clinics given, cases were presented by several members of the Society and members of the Pediatric Staff of the hospital.

Faculty and Staff Meeting.

The regular scientific monthly meeting of the Faculty and Staff of the Medical College of Virginia was held on Thursday, November 17, 1932, at 8:15 P. M., in the auditorium of the Saint Philip Dormitory.

The program was as follows:

1. "Case Reports of Tuberculous Inguinal Adenitis Occurring in Husband and Wife"—Drs. V. H. Griffin and Tom Hall Mitchell.
2. "Ulcerative Syphilitic Lesions of the Stomach. The Pathological Anatomy of Four Cases"—Dr. Lewis C. Pusch.
3. "The Paratyphoid Fevers"—Dr. Frederick W. Shaw.

I. A. Bigger, M. D.,
Chairman.

Dr. H. Cantor,

Petersburg, Va., recently attended the Fifth Annual Graduate Fortnight of the New York Academy of Medicine, on the subject of Tumors.

The Ex-Interns' Association of St. Elizabeth's Hospital, Richmond,

Held its annual meeting in Richmond on October 4th, under the presidency of Dr. R. A. Vonderlehr, of Washington, D. C. The following members were in attendance: Drs. O. O. Ashworth, W. K. Dix, T. L. Driscoll, A. A. Houser, W. Ambrose McGee, A. I. Dodson, John S. Horsley, Jr., and Guy Horsley, all of Richmond; Dr. Wright Clarkson, Petersburg; Dr. R. A. Vonderlehr, Washington; Dr. W. J. Marquis, Newark, N. J.; Dr. Paul T. McBee, Winston-Salem, N. C.; Dr. Guy R. Fisher, Staunton; and Dr. W. C. Caudill, Pearisburg.

Clinics in the morning by Drs. J. Shelton Horsley, A. I. Dodson, and D. G. Chapman, were followed by uncheon at Westmoreland Club. At the afternoon session, papers were read by Drs. R. A. Vonderlehr, O. O. Ashworth, W. J. Marquis, and Paul B. McBee, and the "Ex-Interns' Oration," which had been

prepared by Dr. R. Hugh Wood, of Atlanta, Ga., was read by the secretary in the absence of its author.

At the business session following the scientific program, officers were elected for the coming year, as follows: President, Dr. W. J. Marquis, Newark, N. J.; vice-president, Dr. W. Ambrose McGee, Richmond; secretary-treasurer, Dr. John S. Horsley, Jr., Richmond.

The members then adjourned to the home of Dr. and Mrs. J. Shelton Horsley for supper, following which there was shown a moving picture film of the members attending the 1931 session.

The Southern Medical Association

Had a most excellent meeting in Birmingham, Ala., the middle of November, under the presidency of Dr. L. J. Moorman, of Oklahoma City, Okla. Richmond, Va., was selected for the 1933 place of meeting, and the following officers elected: President, Dr. Irvin Abell, Louisville, Ky.; first vice-president, Dr. James R. Garber, Birmingham, Ala., and second vice-president Dr. Hugh J. Morgan, Nashville, Tenn. Mr. C. P. Loranz, Birmingham, Ala., continues as secretary-manager. Dr. James H. Royster, Richmond, Va., was named secretary of the Section on Neurology and Psychiatry.

American Public Health Association.

At the recent meeting of this Association in Washington, D. C., Dr. John A. Ferrell, New York, was installed as president, and Indianapolis was selected as the next place of meeting. Dr. Haven Emerson, New York, was named president-elect and the following vice-presidents were elected: Dr. Arthur T. McCormack, Louisville, Ky.; Dr. John Sundwall, Ann Arbor, Mich.; and Dr. William P. Shepard, San Francisco.

Dr. William H. Turner, Jr.,

For the past seven and a half years connected with the American Presbyterian Mission at Nanhsuchow, Anhwei, China, is on furlough from mission work and will have his headquarters, while in this country, at his former home, Afton, Va. Dr. Turner graduated from the University of Virginia, Department of Medicine, in 1918. Before entering the mission service, be interned for two years at the University of Virginia Hospital, did special pediatric and obstetrical work in other hospitals, and was in the U. S. Public Health Service, stationed at Ellis Island, N. Y., for two and half years.

Dr. N. Thomas Ennett

Announces that, after post-graduate work in pediatrics and internal medicine at the New York Post-Graduate Medical School and Hospital, New York City, he has opened offices in Suite 409 Medical Arts Building, Richmond, Va., for the practice of general medicine with emphasis on diseases of children.

Dr. R. O. Lyell,

Of Miami, Fla., recently visited his former home at Warsaw, Va., and attended the meeting of the Medical Society of Virginia in Richmond, early in November.

Dr. H. J. Warthen, Jr.,

Of Richmond, Va., of the class of '25, University of Virginia, Department of Medicine, has completed his residency in surgery at Johns Hopkins Hospital, Baltimore, and will spend sometime at Freiburg, Germany, where he will be connected with the Surgical Department of that University.

Dr. Frank C. Pinkerton,

Who has recently been with the American Hospital at Guatemala, Central America, announces his return to Pinehurst, N. C. Dr. Pinkerton is an alumnus of University of Virginia, Department of Medicine, in the class of '28.

The Interstate Post-Graduate Medical Assembly of North America,

Meeting in Indianapolis, the latter part of October, selected Dr. John M. T. Finney, Baltimore, as president-elect for the ensuing year. Dr. William J. Mayo, Rochester, Minn., succeeded to the presidency.

Dr. Allen W. Freeman,

Baltimore, Md., formerly of Richmond, Va., was recently elected president of the Delta Omega, honorary public health society, for the coming year.

Dr. William J. West,

Well known physician of Richmond, Va., has been elected as surgeon-in-chief for the Virginia State Farm and expected to enter upon his duties there the first of December. He succeeds the late Dr. Thomas M. Taylor who died October 18th, after having filled this position for the past fifteen years.

New Psychiatric Clinic.

The new medical center and psychiatric clinic at the Southwestern State Hospital,

Marion, Va., has just been completed at a cost of $100,000. The unit will provide thorough medical and other therapeutic service to the patients at the institution. It will also care for 100 additional patients.

The staff will include two physiotherapists, a graduate nurse, an occupational therapist, a dietitian matron, a stenographer, attendants, cooks, and waitresses.

Dr. Charles L. Harshbarger,

Recently with St. Elizabeth's Hospital, at Pearisburg, Va., has moved to Norton, Va., where he will be connected with the Norton Hospital. Dr. Harshbarger is an alumnus of the Medical College of Virginia in the class of '29, and served his internship at Stuart Circle Hospital, Richmond.

Dr. P. W. Boyd,

Winchester, Va., is out again after undergoing an operation for appendicitis. It is said that, at his request, the operation was undertaken with only a local anesthetic, but the effects wore off before the operation could be completed and administration of ether became necessary.

Doctors on Committees in Brunswick County.

Brunswick county has included several doctors on its committees in charge of the expenditures of the Reconstruction Finance Corporation funds on county roads to relieve the unemployment situation in that county. These are Dr. Bernard Barrow, Blackstone, R. D., Dr. C. L. Purdy, Brodnax, and Dr. T. H. Valentine, Lawrenceville.

Married.

Dr. Wilbur Allen Barker, Danville, Va., and Miss Emily Pugh, Charlottesville, Va., October 29th. Dr. Barker is an alumnus of the University of Virginia, class of '29, and will now be associated with Dr. Wright Clarkson in Petersburg, Va.

The Southside Virginia Medical Association

Is to hold its regular quarterly meeting in Petersburg, Va., December 13th. An interesting program is being arranged and a large attendance is expected. Dr. W. W. Wilkinson, La Crosse, Va., is president, and Dr. R. L. Raiford, Franklin, secretary.

Dr. W. O. Lee,

Danville, Va., was quite seriously injured, the latter part of October, in an automobile collision while on his professional rounds. He suffered a fractured skull and internal injuries.

The American Academy of Ophthalmology and Oto-Laryngology,

At its recent meeting, elected Dr. John M. Wheeler, New York City, as president-elect. Dr. Burt R. Shurly, Detroit, will succeed to the presidency on January 1st. It was voted to hold the next annual meeting in Boston, Mass.

Dr. George W. Gay,

Richmond, Va., who was quite ill for a time, has recovered and has resumed his medical work.

Dr. T. E. Patteson,

Ransons, Va., has been appointed a sub-chairman of the Buckingham County Finance Relief Committee, for the Slate River magisterial district.

Dr. J. Shelton Horsley

Was a guest of the Texas Surgical Society at their meeting at Galveston, Texas, on October 24th and 25th, and read a paper on "Some Observations on Gastric and Duodenal Surgery." There was a banquet for the members and guests on the evening of October 24th, at which he also gave an address.

On October 26th, Dr. Horsley and Dr. W. A. Bryan, of Nashville, Tenn., attended clinics at the Scott and White Hospital, Temple, Texas, and were guests of honor at a banquet given by Dr. A. C. Scott, at which about seventy-five doctors were present.

Dr. J. M. Holloway,

Fredericksburg, Va., has been notified of his election to the American Academy of Ophthalmology and Otolaryngology at its recent annual session in Montreal, Canada.

The Alpha Omega Alpha Honorary Fraternity.

At a recent meeting in Chicago, the directors of Alpha Omega Alpha Honorary Medical Scholarship Society adopted the following resolutions in recognition of the eminent services of the late Dr. William W. Root, Slaterville Springs, New York, the founder of the society and secretary-treasurer since its organization in 1902:

1. That all stationery and official documents of the society bear the words, "Founded by William W. Root, 1902," and

2. That the annual lecture presented each year by a leading medical scientist, be known as the "William W. Root Alpha Omega Alpha Lecture."

The present officers of the society are Walter L. Bierring, Des Moines, president; Austin A. Hayden, Chicago, vice-president; Josiah J. Moore, 55 E. Washington Street, Chicago, secretary-treasurer. Mrs. Root will continue as assistant secretary.

In addition to the officers, the directorate includes Ray Lyman Wilbur, Washington, D. C., Waller S. Leathers, Nashville; Louis B. Wilson, Rochester, Minn., and Willard C. Rappleye, New York City.

The committee on extension and policy comprises Elias P. Lyon, Minneapolis, chairman; William Pepper, Philadelphia; Irving S. Cutter, Chicago; Frederick C. Waite, Cleveland, and Thomas C. Routley, Toronto.

Chinese Lounge Opened at Hospital.

The formal opening of the Chinese Lounge, atop the main building of the New York Polyclinic Medical School and Hospital, took place on Thursday, November 10th, at 3 o'clock, with the Honorable John P. O'Brien, Mayor-elect of the city of New York, and the Honorable Henry K. Chang, Chinese Consul-General, officiating. This Chinese Lounge is for convalescent patients. The opening was attended by a large gathering. Refreshments were served.

Dr. Andrew D. Parson,

Of Raven, Va., was recently elected president of the Clinch Valley Game and Fish Protective Association, at Richlands, Va.

Dr. Louis Perlin

Announces the removal of his offices to 2323 Stuart Avenue, Richmond, Va.

Medical Staff of Hopewell Hospital.

The doctors composing the medical staff of the Community Hospital at Hopewell, Va., at their November meeting, elected the following officers for the ensuing year: President, Dr. Oliver L. Jones; vice-president, Dr. A. T. Brickhouse; secretary-treasurer, Dr. W. W. Cleere; and new member of the executive staff, Dr. D. Lane Elder, all of Hopewell. The next meeting will be held on the evening of December the 16th, at which time a barbecue dinner will be served.

Use Christmas Seals Again This Year.

There will be 2,084 affiliated tuberculosis associations participating in the twenty-sixth annual Christmas Seal sale this year. The seals are on sale between Thanksgiving and Christmas. All but five per cent of the money obtained from this sale is used by our State tuberculosis associations.

Today Christmas Seals help protect you and your family, for although the death rate from tuberculosis has been reduced two-thirds it still kills more people between 15 and 45 than any other disease. Your pennies make possible free clinics, nursing service, preventoriums, and educational work that mean cure for some, relief for many, and hope for all. An interruption of this work is a threat to the health, happiness and security of all. Your health tomorrow may depend on your assistance today.

Buy Christmas Seals! Use them generously on all Christmas packages, gifts, cards, and letters, and let your business correspondence proclaim, "Good health to all."

Charitable Hospitals.

A warning to the public against forcing the voluntary charitable hospitals of the United States—which served more than five million patients last year—to lower their medical standards, has been issued by Dr. William F. Snow, president of the National Health Council.

He says, "the finances of the charitable hospitals have suffered greatly and notwithstanding the urgency of contributions to emergency relief agencies, the public must support the hospitals liberally, if it expects the hospitals to continue to give the best that medical science can offer."

There are more than 4,500 these voluntary charitable hospitals in the United States, many of which have found it necessary to close a large number of their wards and private rooms. The American Hospital Association has pointed out that in the voluntary charitable hospitals the spread between income and expense has been greatly increased in the last three years. On the average they are now giving more than 30 per cent of their services to patients who cannot pay the cost of their care, while their earnings have fallen off 15 to 20 per cent. For years past they have had

to look to the American public for some $100,000,000 in contributions for the support of this free work.

Members of the Medical Society of Virginia to Have the Advantages of Good Medical Libraries.

At its meeting in Richmond, the Medical Society of Virginia voted that the books not necessary for use in the office be given the library of the Medical College of Virginia, that they may be accessible to the students and doctors of the State

This is a valuable collection, consisting of many old books that will be prized because of their age and many new books useful because they are up to date.

This transfer is not intended to make these books less available to members of the Medical Society of Virginia; on the contrary it is intended to make them more available as the college library staff will now attend to the details of sending them out and keeping track of them. Not only these books, but all the books of the college library are available to physicians of the State and we invite them to use the library freely, either in person or by mail. The only condition of loan is that the borrower pay the return postage.

A similar offer was also made our Society through its Library Committee, at our recent meeting. from the Library of the University of Virginia, transportation charges to be assumed by the borrower.

The Petersburg (Va.) Medical Faculty,

At its annual meeting in November, elected Dr. Claiborne T. Jones president, succeeding Dr. Meade Edmunds. Drs. W. B. McIlwaine and C. S. Dodd were elected vice-presidents, and Dr. Wilbur M. Bowman secretary-treasurer. There are twenty-two members in the local organization.

Cancer: Then and Now.

This is the latest publication of the New York City Cancer Committee. It is an unique publication and should be most effective in bringing before the layman what really is being done and has been done in the way of cancer control. It is an 80-page pamphlet and may be obtained for $1.00 a copy from the New York Cancer Committee, 34 East 75th Street, New York City. This furnishes information in regard to cancer, the warning signals, and a list of hospitals and clinics in New York where diagnosis and treatment can be obtained.

Dr. B. A. Tilghman,

Richmond, Va., was elected vice-president of the Skinquarter (Va.) Hunt Club, at its meeting on November 17th.

Dr. F. R. Crawford,

Who has been connected with the American Southern Presbyterian Mission, at Kashing, China, for the past year and a half, has just returned to this country and will be temporarily at Kernstown, Va. Before going to China, Dr. Crawford was located at Farmville, Va.

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Hourly Nursing Service.

The Private Duty Nurses' Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

For information, dial 3-1656. (*Adv.*)

Obituary Record

Dr. Smelt Winston Dickinson,

Oldest member of the Medical Society of Virginia in point of continuous membership, died at his home in Marion, Va., October 29th, at the age of eighty-one years. He was a native of Louisa County, Va., and studied medicine at both the Medical College of Virginia

and the University of Maryland, graduating from these schools in 1871 and 1872, respectively. He practiced in Louisa County until 1881, in which year he moved to Marion. He had always been a prominent physician, school and church worker in that community. He was actively interested in the work of the Medical Society of Virginia and was a member of the State Board of Medical Examiners from the year of its organization, 1885, to 1890. He was formerly a director of the Southwestern Virginia Hospital, a member and ex-president of the Southwestern Virginia Medical Society, was for thirty years a member of the Smyth County Board of Health, and was active in many other organizations in his section. Dr. Dickinson was a great church worker and, only recently, the Marion Baptist Church celebrated his fiftieth year of unbroken service as a deacon. His wife, five sons and two daughters survive him.

Dr. William Joseph Harrell

Died October 31st in Aulander, N. C., where he had lived prior to coming to Norfolk, Va., about twenty years ago. He had been in bad health for sometime. Dr. Harrell was seventy-six years of age and a graduate of the College of Physicians and Surgeons, Baltimore, in 1884. He was a member of the Norfolk County Medical Society and the Medical Society of Virginia.

Dr. Wallace Bennett Cannon,

Of the class of '20, Medical College of Virginia, died in the Veterans' Administration Home, Hampton, Va., September 18th, the cause of death being gastric ulcer. He was a member of the Medical Society of Virginia and practiced for a time in Southwestern Virginia.

Dr. John Mann,

Norfolk, Va., died at his home in that city, October 31st, after a long illness. He was sixty-one years of age and a graduate of the Medical College of Virginia in the class of 1894. His burial was in Petersburg, Va., his former home. He is survived by three sisters and a brother, Dr. D. Meade Mann, of Richmond.

Dr. Floyd S. Suddarth,

Grafton, W. Va., died October 13th. He was sixty-one years of age and graduated in medicine from the University of Virginia, class of '97.

Dr. Gordon Wilson,

Prominent physician of Baltimore, died October 26th, following a heart attack. He was fifty-five years of age and graduated from the University of Virginia, Department of Medicine, in 1899. Dr. Wilson was physician-in-chief to the tuberculosis department of the Baltimore city hospital and was medical director of the Maryland Life Insurance Company. His wife and two daughters survive him.

Dr. St. Clair Darden,

South Bend, Ind., was burned to death November 16th while on a hunting trip in Wisconsin. He was a native of Nansemond County, Va., and was forty years of age. Dr. Darden graduated from the Medical College of Virginia in 1911 and served an internship at the Sarah Leigh Hospital in Norfolk. He is survived by his wife, neé Miss Ruth Milton, of Richmond.

Dr. Cuthbert Gilham,

A former Richmond physician, died in Washington, D. C., November 8th, after a short illness. He was sixty-seven years of age and graduated from the University of Virginia, Department of Medicine, in 1887. Dr. Gilham became blind several years ago as a result of an infection received while treating a charity case. His sister and two brothers survive him.

Dr. Carroll Brice Mount,

A native of Radford, Va., but recently a medical missionary in Africa, was drowned August 29th while on a hunting trip near the mission. He was thirty years of age and graduated from the University of Tennessee, College of Medicine, Memphis, in 1929. His wife, who is also a missionary in Africa, survives him.

Mrs. Walter Jackson Freeman,

Philadelphia, president of the Woman's Auxiliary to the American Medical Association, died October 27th, after a short illness. She was a daughter of the late Dr. W. W. Keen, and widow of Dr. Walter Jackson Freeman, former professor of laryngology at the Graduate School of the Philadelphia Polyclinic. Two sons are also doctors. Mrs. Freeman was interested in all philanthropic work and had been a most active worker in local, State and National Auxiliary work. She was to have been one of the principal speakers at the recent meeting of the Woman's Auxiliary to the Medical Society of Virginia.

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THE MOST GENERALLY PREVALENT, THE MOST INADEQUATELY TREATED, CONTROLLABLE CHRONIC DISEASE.*

ROBERT BAYLEY OSGOOD, M. D., Boston, Mass.

I. Introduction

I desire to express my appreciation of the honor the Medical Society has conferred by this invitation to address you. It is a friendly gesture of Virginia where manners are, as they should be, of equal concern with means, to Massachusetts where I am sorry to say, the means often make us forget our manners. I quite realize that the task which the title of this paper sets is a hard one for the proponent of these propositions to satisfy. However, since I am not only assuming the rôle of proponent, but also must admit describing chronic arthritis as the most generally prevalent, the most inadequately treated, and yet controllable chronic disease, I must confess the faith that is in me that these statements are the truth and nothing but the truth. I cannot declare that they are "the whole truth; so help me God," for the whole truth concerning the disease under consideration is, alas, not yet known. With these few words of introduction, we will read our brief, and although I fear that you may find that instead of being a brief, it may prove to be a lengthy discussion, we will try to conduct you by the shortest roads over the dry and unattractive part of the journey to the viewpoint from which we think we have observed that these propositions are facts and not fancies.

II. The Nature of the Malady

To the general concept of the American Committee for the Control of Rheumatism I can very heartily subscribe. The first three paragraphs of this concept may well serve as a text to a brief discussion as to the nature of the malady.

1. The disease chronic arthitis, prevalent in all temperate zones, represents one of the most important, if not the most important, of existing social and industrial handicaps.

2. The Committee conceives of the disease as a generalized disease with joint manifestations. Certain prodromes may be recognized and it is of vital importance that they be recognized.

3. It is the opinion of the Committee that at the present time no single infectious agent or any completely defined dietary deficiency or metabolic disturbance has been conclusively shown to be the sole cause of these disorders. The Committee inclines to the belief that any one of these factors, or certain combinations of these factors, under appropriate circumstances, may basically underlie the onset of the disease.

III. Classification

It is important at the outset to define the terms we shall employ throughout this paper to describe the two main types of chronic arthritis. These terms are not entirely satisfactory, but they have at least the merit of simplicity. Under the two headings of atrophic arthritis and hypertrophic arthritis we may easily group the terms which have been used in all the more elaborate classifications which have been proposed. Every careful student of the subject who has had the opportunity to observe the clinical aspects of the disease which Virchow called "arthritis deformans," has discovered that at least two distinct types are easily recognizable. If to clinical macroscopic study the opportunity has been afforded for laboratory microscopic investigation, the differences of types become so much more evident that many students have reached the conclusion that under the general term of arthritis deformans are included not two different types but two different diseases. We occasionally observe both types in the same individual, but rarely if ever coexistent. From the welter of nomenclature have emerged three names as synonymous for each type and these are more commonly employed in English literature than any others. The American atrophic type is in

*Read by invitation at the 63rd annual meeting of the Medical Society of Virginia, in Richmond, November 1-3, 1932.

British literature usually called rheumatoid arthritis, and in American laboratory studies is synonymous with proliferative arthritis. Our hypertrophic type is identical with the English osteoarthritis and the laboratory degenerative arthritis.

It is necessary, in order to avoid confusion, to mention one more term which is constantly used in literature, namely, infectious arthritis. We have not employed it in our simple working classification, although we recognize that infection may play an important rôle in the causation of chronic arthritis, and sometimes may be such a star performer as to obscure completely the other etiological actors. The reasons which have dictated the omission of this term are the following: (1) Consistency. The terms atrophic and hypertrophic we are proposing are pathologically descriptive and not etiologically descriptive as is the term infectious. (2) Certain observers believe that infection is the basic factor in both types of chronic arthritis and they, therefore, use infectious arthritis in the same sense that Virchow employed the term arthritis deformans. (3) Although gonorrhea, pneumonia, typhoid, dysentery and probably many other less common infections may be etiologic arthritic entities, it will be found that the joint tissue changes initiated by any of these infections may produce eventual pathological pictures so exactly similar that they fall definitely into the atrophic group. Most of us believe that infection is never a basic etiologic factor in hypertrophic arthritis though it may cause the symptoms to be more acute. It must receive consideration, therefore, in both types, but in the present state of our knowledge it seems not only unnecessary but unwise to employ the term infectious arthritis as descriptive of an entity which deserves to be included as a distinct and separate type in the simple plan of classification which we have adopted.

IV. Etiology

There has been and continues to be such difference of opinion concerning the etiology of chronic arthritis that helpful discussion has been sometimes turned into harmful controversy. I shall try to avoid this pitfall which will only delay us on our journey, making only such statements as have been proved to be true and only those suggestions which I believe may be helpful in controlling the disease.

In the majority of arthritic patients a careful history will reveal what may be called background causes, a soil as it were, upon which the arthritic syndrome of both types is planted, germinates most easily, and yields the best (or worst) crop of joint symptoms and signs, which are but the flowers of the generalized disease. The most common background causes may be said to be heredity, age incidence, body build, fatigue of mind or body, circulatory disturbances, faulty alimentation and elimination, and susceptibility to infections. These are factors in both types.

The history will also usually disclose exciting as well as predisposing causes, and in mentioning these it is useful to list them for each type. The most common exciting causes of the atrophic type are infections, either present or past, focal or general; worry or over exertion; exposure to cold or damp. We will remind you again that atrophic arthritis usually manifests itself in the earlier decades of life before forty.

The most common exciting cause of the hypertrophic type is trauma, either sudden and accidental, or repeated and occupational. It is to be remembered that hypertrophic arthritis does not usually demand attention until after the middle decades. We have placed infection last as a possible exciting cause of hypertrophic arthritis, for the evidence of this factor is most inconclusive both in the characteristic joint tissue changes and in response to treatment. The changes of the hypertrophic type are essentially degenerative changes, and in so far as degenerative changes are favored by low grade chronic infections, just so far may infections be properly listed as exciting causes. As we have said, acute infections superimposed upon a preëxisting hypertrophic arthritis often provoke a subacute exacerbation. The theory that the joint symptoms, especially in the atrophic type, are allergic manifestations, is fascinating and seems tenable. It is difficult and often impossible by any known method of culture to grow organisms from the fluid or tissue of joints in which an atrophic arthritis exists. It has been done in humans and experimentally in animals, especially rabbits, and in the future we may find it possible to do it more regularly in human joints, but the joints of rabbits are peculiarly susceptible to infection and the analogy is not perfect. We must remember that joint changes closely simulating chronic arthritis have been

produced in rabbits' joints by the repeated injections of bacterial free autolysates.[1]

There is much to suggest that the localized joint changes in both types are closely associated with disturbances of capillary control and diminished blood supply. These circulatory disturbances may be demonstrated to exist in arthritics in other regions than the joints and fairly typical joint tissue changes have been experimentally produced in animals by cutting off the blood supply to the articular bone. It is conceivable that the difference in age incidence may in part at least explain the difference in the pathological changes in the two types and that underlying them both may be the factor of "inadequate fluid exchange" (Smith) and altered capillary flow. We believe our eyes and ears are still sensitive to the discovery of a specific bacterium which may be called the germ of chronic arthritis. The history of numerous careful searchers for this agent is long and many investigators have attributed specificity to different types of bacteria. The recent careful and important work of Dr. Russell Cecil and his co-workers[2] suggests a special streptococcus as the probable causative agent in the atrophic or rheumatoid type of chronic arthritis. This group of workers have found this streptococcus in the blood and joint fluid of considerable percentages of active cases of atrophic arthritis and the agglutination tests have tended to confirm their belief in the specificity of their organism. Dawson, Olmstead and Boots,[3] in their very complete studies as to the nature and significance of agglutination reactions with streptococcus haemolyticus in rheumatoid (atrophic) arthritis, consider that "the significance of the agglutination reaction in rheumatoid arthritis serum is largely a matter of conjecture." Nor does the agglutination reaction develop until the disease has been established in its classical form for a period of many months. Their attempts to demonstrate the presence of the haemolytic streptococcus in the blood stream and tissues of patients suffering from the disease have been uniformly unsuccessful.[4] So we are still looking and listening for conclusive proof of specific bacterial etiology. There is circumstantial evidence suggesting, as these authors put it, "that infection by hemolytic streptococci may play a rôle of considerable importance in the production of the disease." But in concluding their discussion, they say, "Further investigation is required to establish definitely whether infection by streptococcus hemolyticus plays a rôle in the production of the disease and if so whether this rôle is one of primary or secondary importance."

V. Symptoms and Signs

We need say little as to symptoms and signs, for they are common knowledge. In both types discomfort, but rarely acute pain, is felt as a premonitory symptom and more often is described as stiffness. In the atrophic type, a subacute onset is common with swelling, pain and sometimes slight redness and heat. This is especially true in that group of cases in young subjects often called "Still's disease." These swellings perhaps most frequently noticed first in the hands, involve the mid-phalangeal, metacarpophalangeal and wrist joints and in the fingers are spindle-shaped. They are periarticular as well as articular.

In the hypertrophic type, the onset is rarely even subacute, unless an injury has been received, and stiffness is more common than pain. The gradual enlargement of the terminal joints of the fingers frequently present the initial sign often without symptoms. As a rule people pay little attention to these "Heberden's nodes." In the larger joints affected by the atrophic type, the presence of free fluid is more common and almost always one may recognize by palpation the accompanying periarticular tissue involvement and the thickening and proliferation of the synovial membrane which is tender to pressure. In the larger joints affected by hypertrophic arthritis, an excess of synovial fluid is not found, the periarticular tissues are not involved, the synovial membrane is not diffusely thickened, and the tenderness is confined to the chondro-osseous over-growths at the articular margins.

We have referred to a mixed type which is occasionally encountered, but the symptoms and signs of each type run true to form—even when the individual exhibits both types of the disease.

In the discussion of symptoms and signs we desire to emphasize most strongly the importance of the arthritic prodromes. Many patients seeking our advice for other complaints

1. Freiberg, J. A. Ar. Surg., 18:645-670 February, 1929.
2. Cecil, R. L., Nicholls, E. E., and Stainsby, W. J.: Arch. Int. Med., May, 1929, XLIII, p. 571. Cecil, R. L., Nicholls, E. E., and Stainsby, W. J.: Am. Jour. Med. Sci., January, 1931, CLXXXI, p. 12.
3. Dawson, M. H., Olmstead, M., and Boots, R. H.: Jour. of Immunology, XXIII, No. 3, September, 1932.
4. Dawson, M. H., Olmstead, M., and Boots, R. H.: Arch. Int. Med., XLIX, February, 1932.

than joint symptoms may be said to be threatened with arthritis, just as truly and in the same sense that we recognize patients who may be threatened with tuberculosis. If we question them closely, we may often elicit a story of fleeting joint stiffness and pain. Fatigue of body and mind is the most serious threat; improper food fuel, faulty combustion and faulty exhaust are other threats. We should pay more attention to our patients' manner of living and manner of eating. We should examine and keep in condition their body machines and should make sure that faulty body mechanics are not producing unnecessary wear and tear upon joint structures. Such predisposing factors fertilize a soil in which the seeds of arthritis most easily germinate.

VI. Diagnosis

The remarks which have just been made indicate the most important phase of diagnosis, the recognition of the prodromes, and the elimination of their causative factors. This is really "locking the stable's door before the horse escapes into the field of the joints" and often does irreparable damage to essential joint tissues, especially the articular cartilage. The diagnosis of the full blown disease is, alas, too simple. The differentiation of the types may require a little experience, but with this aud with the help of Roentgenograms is easily possible.

VII. Treatment

If treatment is to be successful in any but the very early and mild types, the first essential seems to us to be the patient's history. Nothing less than a leisurely, searching and kindly cross examination is likely to discover the background causes which, in our opinion, enable us to plot a curve of successful treatment. Heredity, psychology, home and occupational life, past infections, and many other factors help us to draw this curve. The second essential in planning treatment is the general examination, not the examination of the incidental joints, and covers, of course, the heart and lungs, the blood and urine, the foci of infection, as also the body type and the body mechanics; the quality intake of food and repeated examinations of the quality outgo, often necessitating a gastro-intestinal Roentgenological series of films; basal metabolism tests and perhaps only guesses at other endocrine deficiencies—an analysis so searching that weeks rather than hours are often required before the curve of rational treatment begins to be defined. A hospital rather than a home is the habitat of choice for such an analysis. In a well advanced case we must be ever on the alert to prevent and correct deformity and maintain the correct curves of the spine, the proper weight-bearing lines of the lower extremities and the optimum positions for functional use of the upper extremities. Orthopaedic appliances are often of great assistance in this prevention. We must search for foci of infection and, finding them, must strive not only to evaluate their etiologic significance but to determine when and how and even *whether* the patient will be likely to be benefited by their removal. Physical therapy, exercise and exercises, heat, massage, hydrotherapy, splints and apparatus play a tremendously important part in relieving the joint symptoms. Diet arranged for the individual patient as indicated by the analysis of his intake and outgo we have come to feel is essential, and sometimes the only essential, when normal utilization of the intake and normal elimination of the waste products can be brought about. Studies of the stools of large groups of patients with chronic arthritis will yield evidence of starch indigestion and imperfect utilization of carbohydrates in as high a percentage as 60 per cent.[5] Fermentation is more common than putrefaction, but each case must be considered individually. The vitamines should be high and we must constantly seek for any real dietary deficiencies. Fletcher[6] has shown how important a factor in chronic arthritis a vitamin B deficiency may be and how satisfactory a response occurs when this deficiency is met.

From the extensive materia medica employed for the relief of chronic arthritis we might infer that the choice of drugs would be difficult, but we believe this is not the case. There is no specific drug, certainly not salicylic acid in its various forms, useful as many of these preparations are, for the relief of pain. We remove it more often than we administer it. The indications for iron are clear if the haemoglobin is low. Circulatory stimulants which open up temporarily at least the capillary beds have their place. The arsenicals, be-

5. Hall, F. C., and Monroe, R. T.: Arch. Int. Med., 47, No. 5, p. 762, May, 1931.
6. Fletcher, A. A.: Jour. Lab. and Clin. Med., XV, p. 1140, August, 1930.

cause of their tonic and alterative effects, may often be most advantageously administered. The literature leaves little doubt as to the benefit to be derived from thyroid substance or extract when the metabolism is consistently low. The value of vaccine therapy is a vexed question. We believe it has a place, but perhaps a smaller place than the current literature would suggest. I have gained the impression that as observation becomes more observant and research becomes more searching, the dependence upon complement fixation tests and upon estimations of the sedimentation rates becomes less when by these methods an attempt is made to determine the type and etiologic importance of the infectious element or elements. I am not skilled in the use of vaccines and I am unable to offer a reliable estimate of their value. I say with hesitation that I have come to look upon vaccine therapy as an experiment and I am not certain that the happy *post hoes* which I have observed are always *propter hoes*.

Today, unfortunately, we must list reconstruction surgery as a method of treatment having wide application. Its applicability is limited to that large class of chronic arthritic patients the fires of whose disease have been quenched by nature or by art, but who are left with disabling deformities. A further selection of these cases must be made before the aid of surgery can be helpfully invoked. These patients' general condition must justify the operative risk, their morale must be maintained while one joint after another is attacked. But the reward of gratitude to the surgeon is great, and to the patient the social and physical betterment obtainable by meticulous carefully planned surgery, followed through until the objectives have been attained, means nothing less than a new lease of life in which liberty and the pursuit of happiness again become possible.

As a final method of treatment, I plead for a most relentless "follow up" of patients. The disease has its remissions and exacerbations without treatment, and patients with chronic arthritis whom we treat deserve as careful and as sustained an interest and as repeated "check ups" by their medical advisers as do our patients with diabetes, cancer, tuberculosis and heart disease.

I have reached the viewpoint to which I promised to conduct you since you have had the temerity as well as the kindness to ask me to serve you this evening as a courier. I quite realize that many of the audience might have been better couriers and might have led you to other viewpoints. However, from almost any point of vantage it is possible to visualize chronic arthritis as the most prevalent chronic disease and the most economically and humanely important.

I think I am correct in stating that Massachusetts is the only State whose Department of Public Health has carefully studied the incidence of chronic disease among its living citizens. This house-to-house survey was made in two sections of the State each of which included considerable urban and rural communities. Smaller units of population were similarly studied throughout the rest of the State and served as "check ups" of the findings in the larger areas. The findings for the large and the small areas were essentially the same. They may be epitomized as follows: The four most prevalent chronic diseases in Massachusetts are cancer, tuberculosis, heart disease and chronic rheumatism. The State has a population of about four and one-half millions. There are approximately 10,000 cases of cancer; there are approximately 25,000 cases of tuberculosis; there are approximately 85,000 cases of heart disease; there are approximately 140,000 cases of chronic rheumatism, or more cases of chronic rheumatism than the sum total of all the other three most prevalent chronic diseases.

I have little doubt that similarly conducted studies in other densely populated Northern States would yield equally alarming figures. Europe has taken cognizance of this prevalence, and Sweden has had for many years special State hospitals for chronic arthritis. The disease exists in all Temperate Zones from South Africa to Nova Scotia. A League for the Control of Rheumatic Diseases has been formed in Europe and includes committees from almost all the European nations. The American Committee for the Control of Rheumatism is a member of this league.

The economic importance of the disease may be realized from some recently compiled British figures. In the year 1927, it has been estimated that under the National Health Insurance scheme, in the British Isles alone, including the loss of wages but *not* including the cost of nursing or institutional care, the disbursements on account of rheumatism were ap-

proximately 80 millions of dollars. In terms of cost to industry, this represents an annual loss of twenty-five million working days.

I hardly need to stress the humane importance of the disease. Most of you have seen the blight of rheumatism on your own family trees. All of you have met it among your patients. They rarely die from it, but I am sure some of you feel that they rarely get well. The life of an arthritic derelict, even if the fires of his disease have burnt themselves out, is a life not of labor but of sorrow, of complete disability and of complete dependence. Such facts as we have, therefore, indicate that in our country arthritis is the most prevalent of chronic diseases and probably the most economically and humanely important chronic disease.

It may be a hard and certainly it is a less pleasant duty to try to convince you that chronic arthritis is the most inadequately treated of chronic diseases. I speak from the point of view of a doctor of derelicts. Orthopaedic surgeons should never have the opportunity of treating patients suffering from arthritis. They belong to medical men and not to surgeons. Personal experiences leave strong impresses, and with what may seem malice aforethought but with what is meant for kindness, I state my impressions that the great majority of well advanced cases of arthritis that seek orthopaedic consultation have in the past received inadequate treatment at the hands of their medical advisers. At the Mayo Clinic the histories of the cases that finally sought the advice of the clinic's physicians showed that 75 per cent had either given up hope in their family physicians' ability to help them or had been under the care of cultists. The Massachusetts survey showed that 33 per cent of the persons suffering from chronic rheumatism had lost confidence in medical treatment. In Canada we are witnessing an amazing confirmation of our impression. In a little town not far from Ottawa a country physician who twists feet is being visited, literally by hundreds of patients at a dollar a head every day and among them I am informed is a great company of chronic arthritics. The doctor makes no claim of cure, but thousands of dollars are spent on the chance. The fad will undoubtedly die, for "Truth is great and shall prevail," but as a piece of evidence of the lack of faith in regular medicine it is disturbing. The saddest part of the story is that the sufferers with chronic arthritis are faring no better with faddists, cultists and patent rheumatism cures than with regular practitioners, probably not nearly as well, and both the patient and the doctor are poorer for the attempt.

If I shall succeed in pointing out facts which suggest that the disease, chronic arthritis, is comparatively easy to control, then this enormous load of disability is all the evidence we need to indicate that the disease is being inadequately treated, for it is certainly not being adequately controlled.

Perhaps you will need a little imagination or even a pair of rose colored spectacles to see the vision of control which some of us think we can discern and which has caused me to refer to the disease as a controllable chronic disease. Again, personal experiences have opened the eyes of many physicians dealing with this disease to the "vision splendid." With the occasional, early seen, frankly infectious case which permanently recovers from his acute or subacute or chronic arthritis when the infection is rendered no longer active you are all familiar. Perhaps, unless one is able to follow his cases for years, you do not see as many cases as we derelict surgeons see, who tell the story that after the tonsils were removed they were free from joint symptoms for several months or years; then the arthritis returned, and several abscessed teeth were extracted, and in many instances relief of varying periods was again experienced. So with drainage of the sinuses and removal of the gall-bladder, until, when they seek the surgeon's help, there is nothing else to remove (except the arthritis) and only patchwork surgery is to be done if and when the generalized disease can be rendered inactive.

As time has gone on, orthopaedic surgeons have begun to see early cases of chronic arthritis, due perhaps to reports of help rendered by their patchwork surgical efforts. The crying pity of the disabled cases has stimulated these surgeons, as well as many internists interested in the disease, to consider the soil upon which the infection was planted and to debate the question as to whether these infectious might not arise because this soil favored their growth, and might not be looked upon as the result of a basic generalized disease as well as a causative factor of joint symptoms. Changing the soil before or after an overload of in-

fection has been removed has seemed often not only to relieve joint symptoms permanently as well as temporarily, but also to prevent recurrence of focalizing infections in other localities. The experiences of individuals with their private patients or even with the occasional chronic arthritic patients, who are reluctantly admitted into general hospitals, furnish only impressions and yield no convincing figures as to the possibility of control. Nevertheless, other recent reviews of large numbers of end results seem to furnish the encouraging data we are seeking. For many years an arthritic out-patient clinic has been conducted at the Peter Bent Brigham Hospital by Dr. Francis C. Hall[7] and Dr. Robert T. Monroe. Their end result studies of 89 patients showed that between 65 and 75 per cent of these chronic cases who were not sufficiently disabled as to prevent their visiting an out-patient clinic recovered from their generalized disease and experienced a subsidence of their joint symptoms. Very few of these cases received any vaccine therapy and emphasis was placed on changing the soil, although removal of obvious foci of infection was carried out whenever it was practical.

The Swedish National Hospitals for Arthritis furnish still more convincing figures. The majority of patients entering these hospitals under the pension or insurance system are the moderately severe cases who are prevented from earning their livelihood because of chronic arthritis. Professor Kalmeter has collected the end results of this hospital treatment three years after the patients have left the hospitals. The approximate figures show that 60 per cent of the patients, three years after their discharge, have returned to their old methods of support and are still working, that 18 per cent more no longer require pension, and that only about 22 per cent fall into the disabled class.

Still more encouraging statistics have been published from the London Red Cross Rheumatic Center. The "experience of the first two years shows that in spite of the large number of advanced cases accepted, 70 per cent of the men and 80 per cent of the women had improved sufficiently after treatment to follow their usual occupation."[8]

I do not believe (though I admit I have not seen comparative reviews) that with any of the other three chronic diseases which the Massachusetts survey shows make up the bulk of existing chronic diseases in that state, can such high percentages of recovery or arrest be attained; certainly not with cancer, almost certainly not with chronic heart disease, and probably not with chronic tuberculosis.

I have presented my lengthy brief and you as jury must decide whether or not I have presented evidence which suggests that the titular propositions of the paper are true.

Before leaving this imaginary vantage ground to which you have allowed me to conduct you, I should like to point out a great need which I believe we can see. It stands in the way of control. If we can remove it, I believe the control of the disease will become apparent. When under state or private auspices facilities can be afforded the general practitioner for more careful analysis, more accurate diagnosis, and more appropriate temporary immediate treatment of his arthritic cases, then the curve of rational and successful treatment may be plotted. These facilities in my opinon most general practitioners now lack. Then the patient may be returned to his family physician who with the data thus furnished becomes by all odds the best captain of the patient's fate. Such a plan we believe leads us away from state medicine and toward the conservation of private practice and toward the preservation of the all-important personal relation between the patient and his physician.

If such facilities can be afforded, there is justification for an attitude of strong optimism among physicians dealing with chronic arthritis toward the complete recovery of early cases and toward the control of more advanced cases. We orthopaedic surgeons may then look forward with hope to the day when the arthritic derelict will disappear from our consulting rooms and our hospital wards, leaving us poorer in purse but richer in spirit because this will mean that a more timely and, therefore, a greater service is being rendered by that great bulwark of the medical profession, the family physician.

372 *Marlborough Street.*

Friendship is the holiest of gifts;
God can bestow nothing more sacred upon us!
It enhances every joy, mitigates every pain.
Every one can have a friend,
Who himself knows how to be a friend

—*Tiedge.*

7. Hall, F. C.: N. E. Jour. Med., Vol. 200, No. 8, pp. 369-374, February 21, 1929.
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THE UTILITY AND DANGERS OF THE OBSTETRIC FORCEPS.*

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The process of delivery is essentially mechanical. Perceptions born of experience, which alone may successfully weigh and value the many imponderable factors involved in the mechanical problems of each particular labor, constitute the art of obstetrics. This art is valid only in so far as it is firmly based on an understanding of the mechanics of the process.

The progress of the fetus through the parturient canal is a resultant, depending on the preponderance of expulsive over resistant forces. The normal expulsive forces are the muscular contractions of the uterus, the diaphragm and the muscles of the abdominal parietes. The principal resistance resides in the relative size of the fetus and that of the passage which it must traverse, that is, the bony pelvis with its padding of muscle, fat and connective tissue. This relation usually presents such a disparity as to require a considerable exhibition of the expulsive forces to overcome it; it is so overcome by molding or shaping the fetus to a closer correspondence of size with that of the parturient passage.

It should be appreciated that when original disparity between the fetus and the passage is great, the entire expulsive force may be, for a time, "absorbed" in producing molding. As it is hard to measure the progress of molding, the lack of much *descent* of the presenting part during this period may lead to the unwarrantable assumption of arrest. In these circumstances, only after the lapse of sufficient time without attaining enough molding to permit descent to begin, may the conclusion be reached that natural forces are inadequate to overcome the disproportion.

The second resistive force is the elastic resistance of the cervix and the lower segment of the uterus. The third resistant force is the more or less elastic resistance of the fasciae and muscles of the pelvic floor.

The necessary preponderance of the expulsive forces over the resistances is affected by many circumstances which reduce the effectiveness of the expulsive forces on the one hand or increase the resistances opposing them, on the other. It is hardly necessary to enumerate all of the influences affecting this relationship of forces, but when they so operate that at any stage of the expulsion the resistances become great enough to balance the expulsive forces, the resultant will be zero and progress will be arrested.

In such a situation, artificial aid must be invoked to complete the progress which is essential to the birth of a living fetus. Augmentation of the expulsive forces by pressure from above or by stimulation of the tissue in which those forces reside is of very limited applicability and attended by very certain dangers, alike to the mother and her baby.

Reduction of the resistance by surgical division of the structures constituting it, is of decided value, but necessarily limited in scope, inasmuch as only under the gravest surgical necessity may it be extended to the most resistant of all such structures, namely, the bony pelvis itself.

Therefore, traction to augment the expulsive powers constitutes the most frequent and useful method of artificially re-establishing a preponderance of expulsive force over resistance. Inasmuch as the head of the fetus presents first in the vast majority of labors, some tractive device which may be applied to the head is the readiest means of utilizing traction. The only efficient device which may be so applied is the obstetric forceps. This instrument therefore meets most frequently the need for an artificial means of terminating labor. To be employed properly it must not only succeed in doing this, but it must do so without jeopardy to the life of the child and without irreparable damage to the soft parts of the mother.

The instrument's principal function is traction. Also, inasmuch as improper rotation of the head results in an increase in the resistance to expulsion, and as under certain circumstances such failure to rotate may be overcome by means of the forceps, the latter has a distinct and important function as a rotator. But, while it is true that its efficiency as a tractor depends to some extent on leverage, the deliberate use of the instrument as a lever is improper.

As a tractor it is of value in many conditions involving actual or relative insufficiency of the expulsive powers in overcoming the resistance. Such conditions may depend on actual inadequacy of the muscular contractions *per se*, but most frequently they arise from relative disproportion between the size of the

*Read by invitation before the Richmond (Va.) Academy of Medicine, September 27, 1932.

baby and the passage through which it must pass, that is, actual disparity between the measurements of the fetus in its minimal diameters and of the passage through the bony pelvis in its maximum diameters.

Less directly, disturbed relations of presentation, posture and position of the fetus by increasing the minimal diameters thereof, operate to produce the same disproportion of relation in measurement. Here the function of the forceps as a rotator is of frequent value.

Other circumstances in which traction, by augmenting expulsive forces, operates to attain a successful issue are those of unnatural rigidity of the cervix or of the pelvic floor.

Not infrequently conditions entirely outside the parturient tract indicate the employment of traction, not primarily to insure eventual successful outcome in relation to the forces involved, but to produce a more rapid termination of labor in reference to the extraneous condition. Among the more frequent of such conditions are abruption of the placenta, placenta previa, eclampsia, and heart decompensation.

Having thus outlined the wide usefulness of the forceps, it is necessary to recognize the dangers attending its employment.

The operation of the natural forces of labor endangers the integrity of both maternal and fetal structures. The preponderance of the expulsive forces over the resistances very generally means that the structures constituting the resistances are damaged by the operation of the former forces. It is probable that in no case of parturition does the cervix maintain entire anatomical integrity. It is equally certain that in few cases do the pelvic floor and the structures supporting the anterior vaginal wall and bladder escape damage, even though of such occult nature as to elude immediate detection. The danger of all such damage is directly and inevitably increased by the introduction within these structures of unyielding steel instruments, which always occupy measurable space and frequently present sharp edges which may cut the soft tissues of the mother. Therefore, the use of forceps necessarily increases the danger of damage to the cervix, to the pelvic floor and to the vagina. Besides, if inconsiderately used, the force which is exerted through them may fracture the fragile coccyx and strain the pelvic joints; the edges may lacerate the bladder, the urethra, the rectum and the periosteum of the pelvic bones.

Even in the natural operation of the normal forces of labor the baby is between the upper millstone of the expulsive, and the lower millstone of the resistant forces. Every pound of pressure exerted by these forces has to be resisted in equivalent degree by the delicate fetal structures, the most susceptible to injury of which are the intra-cranial contents, the brain, its vital centers, and its blood supply. Even under the most nearly normal conditions, the effect of labor pressure not rarely causes fetal death, in spite of the fact that the normal forces so operate as to most evenly distribute this pressure and thus minimize its danger.

When the head is directly seized by an artificial means of applying force, the pressure thereof is determined by the sometimes uncontrolled power of the operator's hands, arms and shoulders; this pressure is multiplied to an extent which is hard to estimate by the leverage of the instrument; and the blades are so applied to the head as to most unevenly distribute the pressure. Therefore, the probability of fetal injury is tremendously increased by the use of forceps as compared to the operation of natural forces alone. Such injury may comprise laceration of the scalp, ears and neck; crushing of the calvarium, of the bones of the face, of the orbit, of the eyeballs, of the cervical nerve roots; bursting or laceration of the blood vessels within the skull, particularly the fragile-walled sinuses; and compression of the brain directly or by extravasated blood.

To avoid these dangers of maternal and fetal injury and their many sequelae, which are of all too frequent occurrence, the use of forceps must be most carefully restricted with relation to the condition of the fetal and maternal parts at the time of their employment.

To the mother, the most directly and indirectly dangerous injuries are those involving the cervix, because they frequently cause massive hemorrhage and offer most facile portals of infection. Therefore, the forceps must not be employed unless the cervix is fully dilated and retracted; dilated not so many centimeters or so many finger breadths, but so dilated and retracted that the fingers in the vagina cannot feel any portion of the cervix around the head.

They must not be applied until the membranes have ruptured, lest direct traction on

the membranes may dislocate the placenta. They must not be applied if the vagina is obstructed by atresic narrowing or tumors; or in the presence of tremendous varicosities involving the vagina or labia, lest the resulting lacerations cause uncontrollable hemorrhage and extensive tissue necrosis.

In regard to the fetus, the forceps must not be used until there is at least such a degree of molding that the plane of the maximum diameter of the fetal head corresponds, or almost corresponds, with the plane of the pelvic inlet. If this rule be ignored, the amount of artificial force necessary to secure complete molding is frequently destructive of life, or may result in sequelae attributable to cerebral injury.

The forceps must not be employed as tractors in mal-presentation or mal-position of the fetal head until every effort has been made to correct such conditions either by the use of the forceps as rotators, or by other means.

Therefore, to insure against such misuse of the forceps, a positive diagnosis of presentation and position must be arrived at before they are applied. Careful vaginal exploration is necessary to do this. The introduction of one or two exploring fingers is rarely sufficient. The whole hand must be introduced into the vagina, if necessary under anesthesia. Both fontanelles, and as large a number of other landmarks as possible, such as the sagittal suture, the supra-orbital ridges, the ears, the nuchal ridge, the features of the face, and the line of the mandible, must be successively recognized and their relation determined. Special time and effort devoted to such careful diagnosis will well repay itself in increased success and safety of operative manipulation.

Forceps must not, except under conditions of great urgency or difficulty, be applied in any other manner than to the bi-parietal and bi-malar aspects of the skull, as other applications are much more dangerous from the standpoint of cerebral, vascular, and nerve root injury.

Traction should never be hurried except in life threatening emergency. The force employed should be moderate, smooth, and deliberate; never jerky; imitating nature in being intermittent, with actually timed intervals between tractive efforts.

Of course these rules for the application of forceps are frequently violated, and healthy, living babies are delivered and mothers recover in spite of such violation, but too many mothers are seriously or even mortally injured, and too many babies are killed or crippled by lack of observation of them to permit them to be disregarded with impunity.

It may be asked what is to be done with difficult cases in which the indicated conditions for the application of forceps do not exist. What is to be done for the cases in which the head does not enter the pelvis or where it becomes arrested before it has completely accommodated itself to the inlet? So far as possible, endeavor should be made to anticipate by competent estimation whether the head will be incapable of entering the inlet; failing this, we should endeavor to decide by the result of a test of labor, not too protracted, whether the head does actually come through. In this connection, it is to be noted that the apex of a head elongated by molding may be well down in the pelvis, giving a false impression of complete engagement, when the plane of the maximum diameter is really well above the plane of the bony inlet. Failure to recognize this possibility is a frequent cause of costly error.

If it is originally estimated as certain that the head cannot possibly engage (a conclusion only rarely justified) or if the result of labor test demonstrates that it does not do so, three courses are open:—

First: Resort to elective Caesarean section. Decision as to this measure must be qualified by recognition of the very definite contra-indications to Caesarean section. If such contra-indications exist, Caesarean section is not the choice of election, except when conditions and the competence of the operator permit selection of one of the established technics of extra-peritoneal Caesarean section, or when, very rarely, extirpation of the uterus, at the time of the section, may be entertained as necessary or desirable.

It may be said that some physicians practice many years without having an occasion to resort to Caesarean section, or that a competent obstetrician may seldom or never encounter a case which is impossible of delivery by vagina. But universal insistence on vaginal delivery would certainly cause regrettable results in maternal invalidism or fetal death or injury. There is seldom need to regret resort to judiciously chosen Caesarean section, and frequent occasion to regret failure to employ it.

Second: There is undoubtedly an ill-defined

group of cases in which podalic version and manual extraction affords an easier and safer way out of difficulty than does forceps extraction. It is hard to define the exact content or the exact characteristics of this group, and this expedient is always somewhat of a gamble, because, if having accomplished the version, the after-coming head impacts, the infant suffers a greater jeopardy than before. The use of forceps for extracting the after-coming head is less traumatising than, and therefore preferable to, excessive traction on the neck and shoulders or excessive pressure on the head from above the inlet.

Third: There is the patient biding of time, without regard to fetal survival. All effort should meantime be made to support the strength of the mother, by the use of opiates and the administration of nourishment. The advantage of the time factor may be utilized to the point at which molding shall have occurred sufficient to permit extraction by the vagina in conformity with proper conditions for the use of forceps. Bear in mind that this may connote the loss of the baby, but this is sometimes preferable to incurring too grave a risk for the mother. If fetal death shall certainly have occurred during such a program of expectancy, there should be no hesitation in diminishing maternal trauma by resort to craniotomy.

How shall those cases in which the cervix fails to fully dilate and retract be handled? Given good molding and progressive descent of the head, the cervix (in the absence of scar tissue or neoplasm) is not often a cause of dystocia. When the cervix apparently refuses to stretch and retract over the head, it is generally because the head is arrested in the bony inlet. The vast majority of problems apparently referable to the cervix are really referable to bony impaction.

But occasionally the operator finds himself confronted with the necessity for delivery, all other conditions for forceps being satisfied except the retraction of the cervix. In such case the anterior vaginal fornix should be incised, the bladder separated from the cervix and lower uterine segment, and the latter structures incised anteriorly in the median line. A posterior median incision may also be carried through the cervix. It is practically never necessary to extend this above the posterior vaginal fornix.

Unyieldingly rigid perineum or unusually small vaginal introitus may increase the difficulty of forceps extraction so far as to augment danger to the fetus. The surgical division of the perineum under these conditions is much preferable to the risk of extensive and irregular tears. Such procedure not only permits better restoration of the pelvic floor, but by relieving the counter-pressure against the anterior vaginal wall and the fascial support of the bladder, diminishes the risk of injury to these structures.

From the foregoing, it is evident that the use of forceps is never an alternative procedure. The question should not be, "Under given conditions, shall forceps extraction or this or that other method be used?", but, "The indications for what procedure do the conditions present most nearly correspond to?" Every method has its own particular field of usefulness, within which it is safe and successful, and beyond which its application is improper, futile or dangerous. To define these several fields requires accurate estimation of each individual case.

But many cases are difficult to estimate, and so there should be more recognition of, and reliance upon, the specialist obstetrician in evaluating them. Patients who suffer from abnormal obstetric conditions are just as much entitled, from the standpoint of humanity and sound practice, to consultation with acknowledged experts as are those who suffer from pathology of the thyroid, the lungs, the gall-bladder, or the appendix.

To summarize, the obstetric forceps constitutes the most useful single expedient at our command for overcoming dystocia dependent upon mechanical conditions and for expediting the termination of labor under certain circumstances not so dependent. Its use, however, is attended by definite dangers, both to the mother and to the fetus. To avoid these dangers, its use must be restricted to cases where conditions exist which will reduce them to a minimum. Its use under other conditions, while occasionally successful, is improper, and attended with not infrequent catastrophe. Lacking proper conditions for its use, other means of delivery should be employed. The skill and knowledge of the specialist obstetrician should be as regularly and freely available to patients undergoing abnormal labor as are the services of the specialist cardiologist, internist, and surgeon to patients respectively requiring them.

254 *Union Street.*

THE MANAGEMENT OF CHRONIC CATARRHAL OTITIS MEDIA.*

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A good terse definition of hearing is that given by Hays: "Sound is an appreciable noise that is transmitted to the brain. Hearing is an interpretation of that sound."

The word management, according to the dictionary, means skill in directing. It is a more comprehensive term when applied to medicine than the word treatment. There is probably no chronic disease in which skill in management is more essential than chronic progressive deafness. Patients coming to us for relief from chronic deafness may be roughly divided into three classes: Those who have had treatment from one or more physicians, much of this being over treatment; they are nervous, disheartened and discouraged, but still have the desire for better hearing for "Hope springs eternal in the human breast." Another class includes those who come to us for the first time; they have noticed for some months or for some years that they have not been hearing so well, and have treated the matter rather lightly. Suddenly they are shocked to find their hearing is either very much worse or else the noises have started in the head. They have been deluding themselves all this time that the trouble was of a minor nature that could easily be corrected by a little treatment and are more than surprised to learn that things are very much worse than they had expected them to be. There is still another class, less numerous, who are nervous and apprehensive, that have had one or more relatives who have been deaf, and while they themselves still have good hearing they are tormented by the thought that the influence of heredity will cause them to become deaf. In most of these cases their fears are groundless.

When a patient consults us for the first time complaining of bad hearing, it is well to get a short history beginning from early childhood, and unless we can give them the necessary time, at least a half hour or more, for an examination, a subsequent appointment should be made. Much depends on this first interview and examination. An indifferent manner or an air of superficiality will probably convey to the patient a lack of interest, which will handicap the physician from the start. Unless we can impress our patients with our sympathy and understanding of their troubles and can also impress them with a reasonable hope of making them better, the battle is half lost before it has begun. There is no disease where constant optimism is more necessary to get even moderately good results.

Most of our patients of middle age or older frequently get great comfort when it is explained to them that as we get along in life our hearing as well as our eyesight and other special senses becomes less acute. The history is especially important. The family history pertaining to deafness, previous disease and general condition of the health; the onset of the deafness, previous symptoms, habits as to diet, exercise, constipation, etc., should all be carefully noted. Many of our patients will give a frequent history of earache in childhood. Some of them trace the beginning of their bad hearing early in life to such diseases as measles, scarlet fever, and the like. Many will tell you of frequent head colds, others of frequent attacks of sore throat and tonsillitis.

Examination of the upper respiratory tract should be thorough.

The presence of obstruction to nasal breathing should be noted.

Chronic sinusitis, naso-pharyngitis and diseased tonsils should be looked for.

A high arched palate with protruding upper jaw and irregularities of the teeth means impairment of nasal breathing and can usually be traced to neglected adenoids during childhood.

The use of the Holmes' pharyngoscope is with me a routine practice. Generally we learn nothing that could not be discovered by a good anterior and posterior rhinoscopy. Often, however, a diagnosis of unsuspected chronic sinusitis of the posterior ethmoid and sphenoid sinuses can be diagnosed with this instrument. On several occasions adhesions between the posterior part of the tubal cushion and the pharyngeal wall have been discovered. These when broken up will measurably help the hearing. A perfectly straight nasal septum is seldom seen. Even with patients with a moderately deviated septum the breathing space is generally sufficient for all practical purposes. To operate on these patients would be useless surgery. Unless the amount of inspired air is insufficient to ventilate the nasopharynx or unless the crooked nasal septum

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interferes with natural drainage of the accessory sinuses, operation is not necessary.

Glandular hypertrophies in the fossa of Rosenmüller can sometimes be detected. These are usually the atrophic remains of adenoid tissue. Hypertrophy of the turbinates, generally the lower, are sometimes seen. This condition should, of course, be corrected but operation for this is not generally necessary unless polypoid degeneration of the posterior tip of the lower turbinate is observed. These posterior tips should be removed when they are large enough to interfere with nasal ventilation or when they are soft enough to come in contact with the lateral pharyngeal wall.

Many patients will tell you that their deafness began with an attack of influenza and that subsequently after each cold their hearing gradually became less and less. When you get a history of repeated head colds hyperplastic sinsuitis should always be suspected. Here again the Holmes' naso-pharyngoscope has proven a valuable instrument in making proper diagnosis, and is generally of more value to me than an X-ray examination.

The exact condition of the tissues of the tubal orifice can also be made out by the use of the pharyngoscope.

We now come to the question of hypertrophied adenoids and diseased tonsils as a causative factor of chronic progressive deafness. We have all seen many cases where negligence in early life has led to a degree of deafness in later life. The theory has long been held and is still taught in all our textbooks that tonsils and adenoids set up a chronic catarrhal infection of the tissues that have to do with the proper conduction of sound to the perceptive apparatus.

This disease has been called chronic catarrhal otitis media in contra-distinction to disease of the receiving apparatus or end organ. The supposition is that if the sound waves can be properly transmitted to the cochlea, the hearing can be brought to an approximately normal state.

How many of us have repeatedly seen patients who have apparently normal eardrums and normal tubes and no evidences of pathology and in whom no marked disturbance of the conductive apparatus can be demonstrated and yet have a decided deafness. Treatment of chronic progressive deafness following along the lines of this theory, has not, we must admit, been brilliant up to this time.

Dr. Francis P. Emerson, who has written several illuminating articles on this subject, in speaking of the failure of the otologist to improve or cure more patients with chronic progressive deafness, says:

1. "Has not this failure been largely due to the fact that we have been trying to explain nerve dysfunction in terms of physical obstruction. Sound tones may fail completely or partially to reach the perception center, but obstruction never causes nerve derangement unless pressure, irritation or long continued excessive sound tones co-exist as additional factors. Neither does the relief of obstruction in any way effect the etiology of an intermittently progressive disease as that which characterizes a gradual loss in tone perception which otologists have to treat. One of the early errors that was misleading in our understanding of the pathology of the middle ear was due to misconception of the nature of the catarrhal process in that it was generally thought to be non-bacterial in origin. It would seem to be obvious that any excess secretion from a mucous membrane must be due to an irritation from either a mechanical, chemical or bacterial source. A mechanical cause could be easily eliminated; any chemical change that was constantly present in the secretions was never demonstrated, hence, the inference must be that it was due to bacteria. Science has strengthened the contention that slowly progressing deafness is a disease involving the perception apparatus."

2. Emerson further believes that in practically every case of progressive deafness there are one or more chronically diseased and unopened follicles of the tonsil and that we will invariably find a tender gland at the angle of the jaw on the side of the involved ear. This he calls the sentinel gland of Cohnheim.

Some years ago Dr. Lee Wallace Dean and Dr. C. C. Bunch, working in the laboratory of the University of Iowa, found from the studies of a goodly number of patients of so-called hyperplastic otitis media that all with one exception showed evidences of a lesion of the nerve or end organ, and that there was no constant relation between the extent of the lesion of the middle ear and the lesion of nerve or end organ and for this reason have come to the conclusion that disease of the end organ and acoustic nerve are much more common than a lesion of the optic nerve.

My colleague, Dr. George F. Gracey, of Har-

risburgh, Penn., some years ago in an article read before the Pennsylvania State Medical Society, claims that the results of these and other observations definitely confirm what was before only an assumption that the acoustic nerve is often the seat of a neuritis from infected lymph adenoid tissue, the toxic products being elaborated by bacteria and carried by the blood or more often by the lymph stream. He speaks of the effect of the tonsillar or dental toxines on the vestibular nerve and refers to the cures made by clearing up these sources of infection. To further reinforce this theory, he cites the fact that "In the developmental scale the cochlear nerve is much younger than the vestibular, and therefore should be more sensitive to the effects of degenerative processes."

We now come to treatment. The first thing to do is to correct any disease in the nose, naso-pharynx or throat. Before any operation is attempted, one should be sure that he has the absolute confidence of the patient so as to obtain the necessary cooperation. There is no disease in the treatment of which confidence is more essential. Some patients readily assent from the beginning to any treatment outlined, and in others it may be necessary to temporize with treatments which we know may not have immediate effect. In the meantime, however, both patient and doctor are getting better acquainted and that confidence in the physician is being acquired which is all so necessary for the patient's good.

Except in the more hopeless cases it is well to give a moderately hopeful prognosis. These people come to us for relief and it seems to me that it is cruel to turn them away without even one ray of hope. Sometimes we will see in some of these patients a change in their mental attitude toward life even after only a very few treatments. Then they take more interest in things and become more wide-awake. If we can secure their confidence at the start, its maintenance is made much easier and the want of good hearing will not be either so noticeable or so troublesome.

The patient with one deaf ear and who hears well with the other is often a problem, and you often have heard them say, "I have one good ear; why bother with the other?" It is our duty to make it plain in these cases that the causative factors which have made one ear deaf may produce the same condition of pathology in what is now the good ear. It is well to see this type of patient twice a year for a check-up on the hearing.

Frequently we see a patient who, because of deafness in one ear, is very apprehensive about the other, or good ear. A good many years ago a lady forty-five years of age consulted me about such a condition. She was quite deaf in one ear and had been told by a prominent surgeon that unless she had some rather extensive surgery done on the nose she would lose the hearing in the other ear also. She was principal in charge and part owner of a school for girls and had in addition the financial responsibility of keeping a family. She was told that in my opinion the operation was unnecessary and, furthermore, there was no necessity for assuming she might grow deaf in the other ear. Her hearing was examined from time to time for a period of five years. She was not seen again for fifteen years at which time, at the age of sixty-five years, her hearing had remained the same—for about twenty years. Though the hearing in chronic progressive deafness usually gradually gets less and less with years, there frequently comes a time when it becomes stationary and remains so for a long while, and no, one can say with truthfulness that this particular patient may not be found among one of these.

Before beginning treatment it is well to have a plain talk with our patients and tell them just what the outlook is for betterment and give a general outline of treatment. Here conservative optimism is essential.

Our patients naturally want to know two things. First, "Can my hearing and annoying symptoms be improved, and, in case this is not possible, am I going to become deaf?"

With the exception of the fortunately few patients who have oto-sclerosis or who are suffering from acoustic neuritis, such as boiler maker's deafness, it is my practice to look on their future as cheerfully as possible.

In nervous or apprehensive patients it is well not to stress the necessity for operations in the beginning of treatment, although we may have this in mind at the time. Too early insistence may cause them to take flight. The proper treatment of nose, naso-pharynx and throat to my mind is of the greatest importance, and the correction of any disease or abnormality in these structures is most essential.

Unless the outlook for betterment is hopeless,

the patient is general told that it is possible for them to get some benefit from treatment but just how much improvement we can get cannot be determined until they have had some trial treatment. If they are willing to take from six to ten treatments in all, it is possible they may be made to hear better. If at the end of this time there is no improvement it would not be well to continue the treatments further.

Except as an instrument to determine the excursions of the drum head the Seigel otoscope should never be used. It has never done any good and the possibilities of doing harm are considerable. The same may be said in a greater degree of the Delstanche masseur.

The theory that sound waves cannot be properly transmitted to the cochlea when the joints of the little ossicles are stiffened seems reasonable, but any attempt to break up these adhesions does more harm than good to the hearing.

The condition of the Eustachian tube should be first looked into. It may be narrowed and admit too little air to the middle ear cavity, and again it may be over-distended. Both of these conditions are due to a chronic salpingitis caused by extension of a chronic naso-pharyngitis to the tube. Eustachian bougies in the later sub-acute or early chronic cases are sometimes a benefit. In the advanced cases, however, they are of little or no value in improving the hearing but sometimes help the tinnitus.

Kerrison some years ago suggested the use of a bougie which is stiff enough for the purpose but which can be bent without breaking. Select your catheter, run the bougie through the catheter until the tip is not more than one and one-half inches from the end of the tube. At the other, or distal, end of the catheter, bend the bougie sharply at right angles.

By this method we can also tell approximately how far the bougie is in the Eustachian tube without the necessity of marking the bougie. The use of a catheter should not be extended over too long a period of time, and when air is used afterward the Politzer bag should also be used in preference to compressed air.

The Dench menthol apparatus is a pleasant treatment but not nearly so effective in my hands as the Van Zandt apparatus. In this the crystals are heated and the warm medicated air forced through the catheter. I have one patient who has been getting this treatment intermittently for thirty years and another for fifteen years.

The use of the electrical aural vibrator in which the vibrations are conveyed through a large sized catheter to the Eustachian tube has proven a benefit in many cases.

The use of this instrument, however, is of less value in improving the hearing than it is in lessening the tinnitus, although I have several patients on whom this instrument has been used for a long number of years and who insist that they always feel better for a time after its use.

Treatment by this instrument by the use of the ear tips in which the vibrations are conveyed to the drum membranes directly seems to me to be absolutely valueless.

Applications to the Eustachian orifice should always be made after the use of the catheter. This is done by a flexible applicator—the end of which is wound with cotton. The applicator should have about the same curve as the catheter and the application is made in about the same manner in which the catheter is used.

Various solutions can be used, such as 20 per cent argyrol solution, iodine, and glycerine—about the strength of Mandl's solution No. 2 and occasionally 2 per cent silver nitrate is used. Sometimes an application made to the naso-pharynx of a very good formula given me by the late Dr. Skillern, which consists of 4 drams of tincture of iodine and 6 drams each of tincture of benzoin and glycerite of tannin, is a more pleasant application than Mandl's solution.

Recently Drury, of Boston, has called our attention to certain types of hepatic diseases in which there is associated impairment of hearing, tinnitus and vertigo. The ear condition in these patients is much improved by the treatment of the liver disease—more especially operations on the hepatic ducts and gall-bladder. Personally I can recall several patients who were much benefited by this and similar treatment. One patient, a lady, aged sixty-two years, had constant tinnitus and was so deaf that she could only hear a loud voice six inches from the ear. The vertigo was so marked that she could not sit on a chair long enough for a proper examination. She was given occy-crystine, a proprietary preparation, which is a standardized hyper-tonic solution

of sodium, magnesium, potassium and calcium salts. Within three weeks the dizziness, vertigo and tinnitus had disappeared and she could hear a moderately loud voice twenty feet. This patient should have had a gall-bladder operation but felt so good from the use of this treatment that she postponed having it done. She died about a year later from grippal pneumonia but her ear condition remained very satisfactory.

We now come to the question of operative treatment of the lymph adenoid tissue. Personally I have never seen a patient over twenty years of age whose hearing was permanently benefited by removing the tonsils. Sometimes they will hear better for a while after the operation but this improved hearing generally relapses. This state of affairs, it seems to me, is due to the fact that they have come too late—at a time when the acoustic nerve has been subjected too long to continued chronic poisoning.

Since Emerson wrote his article, some years ago, I have been constantly on the alert to find this "sentinel gland" of Cohnheim, but have not been able to demonstrate its presence in most cases examined. The use of the words "sentinel gland" in this connection seems a rather poetic one. The word sentinel, as we know, means one who watches and stands guard, usually over an army. In this case, however, instead of standing guard over an army, these glands are supposed to guard the health of individuals and prevent dissemination of infection. It is only when this lymphatic gland, situated at the angle of the jaw, becomes so diseased by repeated assaults from sore throat that the barrier of the lymph nodes has been overcome and the perceptive apparatus is badly diseased long before the conductive apparatus.

We have all noticed that chronic deafness advances in cycles in many cases. When this condition can be demonstrated it seems that we are justified in advising tonsillectomy even in the absence of tender glands or any apparent chronic tonsillar disease. Personally, I know of no absolute way in which to exclude a diagnosis of chronic tonsillitis. Frequently I use a sterile glass suction tube applied to the tonsil after the throat has been thoroughly cleansed by a mild antiseptic solution. When the secretions obtained in this way are cultured and show either haemolytic streptococcus or streptococcus viridans in fairly numerous colonies, this further strengthens the diagnosis of chronic disease. Any tonsillectomy which is performed in these cases should be done with the understanding that, while it may not improve the hearing, it will probably keep things from getting worse.

Last autumn a man, fifty-five years of age, living thirty-eight miles from Harrisburgh, consulted me for tinnitus, vertigo, dizziness and impaired hearing in the right ear. His condition had gotten so bad that he was hardly able to manage his barber shop. Though the tonsils were much diseased, he was violently opposed to any operation. He was treated twice weekly by the McAuliffe suction and irrigating apparatus and immediately began to get better. After eight weeks of such treatment the hearing had improved from one foot to twelve feet for the whispered voice and the vertigo and tinnitus had entirely disappeared. He was advised to discontinue treatment for a time but at the end of two weeks he reported some return of dizziness. In as much as he was compelled to make an automobile trip of at least seventy-five miles in order to get this treatment, insistence was made on his having the tonsils removed. He has not been seen here since but it has been reported to me that he has relapsed to his old condition.

The importance of clearing up all dental infections has already been mentioned. That diseased teeth can cause bad hearing as well as vertigo and tinnitus has long been recognized. A dead tooth is in most cases a diseased tooth and potentially can do much harm. Frequently, however, we encounter considerable difficulty in persuading such patients, especially women, to have these teeth extracted.

We will do well in some cases to supervise the diet of our hard of hearing patients. Overeating or under-eating should be regulated. Lack of proper nourishment will produce a mild secondary anemia and this places an additional load on the patient. Some women with small families who do their own cooking will be found in this class of the under-nourished. Whenever possible it is well to insist that they go to a near-by restaurant and get at least one good nourishing meal every day. In these anemic patients bi-chloride of mercury, 1/24—1/32 grain, in compound tincture gentian three times daily is a good tonic. Sometimes the

addition of potassium iodide, 5 grains to this dose, is of value.

Consensus of opinion of the more enlightened medical profession seems to be that if we are to secure better hearing in future generations, we must begin our examination and treatment of the hearing with the school or pre-school age.

In this rambling talk I have tried to give you my own personal experience in the treatment of chronic progressive deafness rather than that which you will find in the textbooks.

In conclusion, I would say that in the beginning of this disease the treatment is best managed by the rhinologist, but later on it will require the best thought and skill of both the rhinologist and otologist to obtain even moderately good results.

224 *Pine Street.*

MEDICAL SERVICE IN JAILS AND PRISON CAMPS IN VIRGINIA.*

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The Commission. On August 15, 1932, at the instance of the Commissioner of Health and the Commissioner of Public Welfare, the Governor of Virginia authorized the detail of the Assistant Commissioner of Health as the Medical Advisor to the Department of Public Welfare. In commissioning him to this duty the Governor had this to say:

"In view of the fact that there are 100 county and 16 city jails in the Commonwealth, not to mention numerous city and town lock-ups with an average daily population of 3,000 prisoners, there can be no doubt with the evidence at hand, that efficient central medical supervision by the Department of Public Welfare is a necessity."

More than twenty-five thousand dollars ($25,000.00) a year is spent for jail medical service, and the Governor's communication indicates that the lack of intimate knowledge as to the character of such service calls for inquiry, and that the question as to whether the medical service to prisoners generally is adequate as to quality or quantity or is such as to reflect credit upon the State penal system ought to be determined.

Questions.—The following questions require an answer:

Are County and City authorities providing facilities for the proper treatment of sick prisoners? Are the sick segregated from the well? Are proper hygienic conditions maintained at the jails? Is proper economy exercised in the administration of State funds used in this connection? These questions and others naturally arising out of them are sought to be answered through—and again I quote verbatim from the Governor's letter,—"A regular, competent, disinterested medical inspection service. The whole relationship between the penal system, particularly the farms for misdemeanants and road camps on the one hand, and the jail population on the other, requires continuous expert medical service and advice."

Agent and Attitude.—Whether the person delegated to this duty is prepared to fulfill expectations remains to be seen. He is glad, however, of the opportunity to speak to a group of medical men on the subject and to clarify if possible any misapprehensions that may exist as to what is sought to be accomplished and to state his attitude in regard to the medical service at present existent.

In the first place he will assume that the doctors upon whom the duty falls to look after prisoners are competent to do the job. He, is, therefore, prepared to consult with them as to their methods, and to enter into their plans for improving jail medical service. They presumably from intimate association with the problem know more about the matter than he has yet been able to learn, and consequently he most emphatically does not propose at the outset at least to assume the role of instructor. Up to this time the jail physicians he has had the privilege of interviewing officially have proven to be in the main old friends and practitioners of standing and experience. From these he has received the most cordial reception and without exception tenders of assistance and cooperation.

A Medical Task.—Anyone who knows anything about the jail population knows it to contain an undue proportion of mental and physical incompetents. That these incompetents should be judged by the standards which guide the conduct of normal individuals is one of the pathetic and apparently incurable maladjustments of society. To mitigate and where possible to correct the ill effects of society's ineptitudes in so far as such respond to medical methods, is a job for medical men.

Medical men, i. e., jail physicians, are in

*Read before the Southside Virginia Medical Association at Piedmont Sanatorium, Burkeville, Va., September 13, 1932.

touch with the prison population in more or less desultory fashion. The State provides a rate of pay for the medical care of ill prisoners and fixes a maximum yearly stipend for the doctor's services. This pay was fixed in 1887 and cannot exceed $500.00 in any one year. $.75 a day is allowed for one patient, and where there is more than one $.50 a day only for attention to each additional one of them may be collected.

Medical Service.—In most of the county jails the doctor visits the jail only on call. Few of these jails have a place where the doctor can quietly examine a patient and administer drugs or remedies requiring aseptic technique or surgical manipulation; consequently, his treatment is necessarily more or less perfunctory. Such conditions are satisfactory neither to the doctor nor the patient, and have been the occasion for many complaints. The hit or miss method of arriving at a diagnosis, and the gunshot prescription method of effecting a cure, serves as we all know to give relief in the majority of cases that the doctor sees, but the exceptional case is constantly arising to render such a method wholly unjustifiable under any circumstances, even, shall I say, for jail prisoners.

The attitude of the public, which is reflected by the officials elected by the public, has been for a long time that anything is good enough for a jail bird. "He's an enemy to society, so 'treat him rough.'" He may, as the jail cards record, be committed simply for non-payment of a fine for violation of traffic law, or for "possession" (that is, possession of liquor), or he may be a housebreaker, forger, or murderer, but the fact remains that he is a ward of the State and entitled to humane treatment along with the discipline necessary to his case.

Medical Honor.—The State having established the principle that among these humanities is medical care as needed, the honor of the profession is engaged to see that he gets it. Up to the present, neither the Department of Health nor the Department of Public Welfare have had a medical man on their staffs who could give time and thought to the medical aspects of the State's duty to those who have been arrested and confined. The newly appointed medical advisor to the Department of Public Welfare seeks to perform this service.

The principal medical problem in relation to jails is in connection with treatment of the venereal diseases, syphilis and gonorrhea. The principal public health problem lies in enforcement of proper segregation of such cases. As indicated previously, there are few jails in which there are facilities for proper examination and treatment of prisoners, and, consequently, when ill, they are rarely given the best attention. Modern diagnosis and treatment, as every doctor knows, demands a quiet room and an irreducible minimum of equipment. Neither of these is available in Virginia jails.

A man with open syphilis should be given salvarsan which, for its administration, demands that the patient be in a recumbent position, in such an environment as to permit of aseptic precaution. Gonorrhea cannot be satisfactorily treated in a jail cell, and neither can the injuries that are the natural accompaniments of brawls so often preliminary to arrests.

Bricks Without Straw. — The perfectly competent jail physician has more often than not to deal with the prisoner's injury in a manner unsatisfactory to himself or send him to a hospital for treatment by men often no better able than he to meet the needs of the situation were he furnished by county, city, or State with the proper equipment at the jail.

The law authorizes the Board of Supervisors of a county and the governing bodies of the cities to adopt rules for the care of jails and the inmates. This authorization has been, in very many instances, ignored; and where rules have been adopted, they are more or less of a dead letter, as are many of the statute laws dealing with jails and their conduct. The practice most in vogue in reference to the jail physician is simply for the jailor to call him when the prisoner complains of being ill, and when he arrives the doctor questions the patient in the narrow cell where he sleeps, and makes such examination as is possible in the immediate presence of at least one other prisoner, and in the steel cage jails, generally, in the hearing of many others whose open-work, contiguous cells, admit of no privacy whatsoever. It would be invidious indeed for anyone to criticize adversely medical results achieved under such circumstances.

It is beside the mark to say that these are the conditions obtaining in many of the poorer homes to which the doctor is called, for jail prisoners are State charges, and service by the State should approximate something better than that which by necessity is the portion

of the abjectly poor over whom the State exercises no medical control.

Hopes.—It is in recognition of such facts that the Departments of Health and Public Welfare approach the problem of jail medical service. The situation demands action. If more satisfactory service can be secured with reasonable promptness and within the limits of present resources, well and good. If less is being spent in some places than is needed to effect improvement, this fact will be shown. If more money has been allotted yearly than is necessary to do the job properly in certain instances, then by readjustment here and amplification there, a more uniformly satisfactory service may perhaps be secured. If economies can be effected, so much the better. These, however, will be a by-product rather than an immediate object. Such is our hope in regard to jail medical service.

Care in Camp.—In regard to medical care in the prison road camps which serve as outlets for the crowded jails as well as for the penitentiary, the following is true: Medical service to these is secured by arrangement with some local physician. The service demanded of the camp physician is such that physicians have generally been unwilling to serve on the basis of pay allowed jail physicians. The penitentiary authorities have, therefore, found it expedient to make a contract with a local physician on a monthly basis, in order to secure competent and regular medical attention.

The sanitary arrangements of these road camps are excellent. It was the lot of the present medical advisor some thirteen years ago to put into effect at the road camps the regulations, sanitary and otherwise, adopted jointly by the State Health Department, the Penitentiary Board, and the State Highway Commission. It is a matter of pride to these three State agencies that no other penal camps in the country are superior in any respect to those in Virginia. It is the hope of the Departments of Public Welfare and of Health that conditions in the jails may be in time brought to a similar standard of excellence in regard to sanitation, and that the medical service in both may be elevated to the highest practicable plane.

"The only man who never makes a mistake is the man who never does anything.—*Theodore Roosevelt.*

THE NEED FOR RESEARCH IN MENTAL HYGIENE.*

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Mental hygiene developed from psychiatry but has reached out beyond the study of the abnormal into the normal and has changed its goal from the understanding of mental disease to the understanding of all human behavior, both the well adjusted to life and the maladjusted. The approach also has become more and more scientific, as it has ceased to be guided by interpretations and theories on learning through observation and experience certain definite facts about the causes and kinds of behavior. On top of each fact have been placed others until now at this early date in the life of this new science the accumulated data looms up as a guidepost to greater things.

It is often asked, suppose we do educate the parent, still more suppose we do get an abnormal mental disease in its beginnings, what can be done about it; can you save the child? Do you know that delinquency is caused by the environment, and cured by its correction? Does delinquency really lead to crime and can mental disease and major behavior disorders be prevented by anything we make use of at the present time?

To answer these questions, let us see what facts have been accumulated. It has been shown that, as a usual thing, two-thirds of the delinquents entering the juvenile courts for the first time can be expected to report later as adult criminals. In Boston, however, the Child Welfare Agencies state that only one-fifth of their delinquents fail to adjust. A twenty-year review of the work by Healy and Bronner, in Chicago, shows sixty-one per cent failure with male delinquents and forty-six per cent failure with girls instead of the expected seventy-five per cent. So we have this encouragement to continue the work with delinquents.

Burgess and Shaw have shown the effect of local environment. In so-called "interstitial zones" lying along railroad tracks and between better neighborhoods the boys are almost 100 per cent delinquent, while in the neighboring zones there is almost no delinquency. This suggests that further sociological study would

*One of a group of papers read at the Virginia State Conference on Childhood and Youth, held at Richmond, November 23-24, 1931.

offer a great reward. Freeman has studied the intelligence of six hundred children before and after their exposure to controlled environments, showing distinctly that the intelligence rating of the child varies with the intellectual level of the environment. This is an obvious fact, perhaps, but to have it in black and white brings courage to those who work with the retarded child.

Actual proof of the prevention of mental disease is, of course, hard to obtain although many facts as to causes have been collected. We know that the hyperactive child, while very troublesome, is more apt to adjust and to escape psychosis than the recessive, retreating child who tends to run into mental disease in spite of all that can be done. We know that insanity starts in childhood, that delinquency is one of the first steps toward crime. We also know that in those cities where behavior problems are attacked early juvenile delinquency and insanity have ceased to be increasing burdens.

There are as yet no answers to the total situation, yet many things have been learned about the individual child, as it has been demonstrated many times that criminal tendencies can be changed and that mental disease can be prevented and in its incipiency cured. But we are just on the threshold. We need more facts, more guideposts; we must study the individual, the group, the race and the nation. There is need for the biochemist, the anthropologist, the sociologist, the economist as well as the physician.

In Virginia the situation, while similar to that in other states, is in many ways unique. The citizens of this State must work out their own problems, therefore, and can only do so through careful and systematic study. There are several of these problems that are of great interest. Why of the 48,082 individuals committed to jails last year, are there so many juveniles and young adults? What effect does jail life have on these children? Then there are 100,000 children in this State that did not attend any school in 1929-30, and 59,659 white children and 35,863 colored failed to pass, while 69,051 were dropped from the schools. There were last year 247 homicides in the State and the suicide rate increases each year.

The problem of the feebleminded and isolated rural native white must be solved. One State mental hospital had an admission rate of over 90 for one month and there are over 10,000 on the rolls of the mental hospitals. New York State with its great urban population has 73 per 100,000 in mental hospitals while the rate for comparatively rural Virginia is only 10 less.

The jail, the penitentiary, the large State hospitals, are not the answer to these problems. We must seek fundamental causes. $100,000,000 were spent on 300,000 mental patients in the instutions of the United States last year, but less than one per cent of this went for a search for causes. Rosanoff states that mental health can be bought, and certainly if five per cent of the $2,000,000 spent for the care of the mental sick in this State could be used for study of means of prevention many hundred thousand dollars could be saved. But we have no such funds and there is practically nothing done.

In conclusion, let me suggest a few problems just at our hands and easily investigated.

1. What is the mental status of the prisoners inhabiting our jails? (If not all the jails at least one jail.)

2. What environments manufacture these individuals?

3. There are perhaps 50,000 feebleminded in this State, but we have no authoritative surveys. One county or one city in which a thorough study of this kind was made might affect the whole educational system.

4. The cost of the care of the mentally sick increases yearly. How wise it would be to spend a sum for adequate research in this field where the reward of study is so promising that it seems obvious.

Disorders of the personality which include both mental disease and crime are understandable and can be prevented as well as cured if we will just give to the problem the time, the money and the cooperative effort the magnitude of the problem justifies.

THE GENERAL PRACTITIONER IN RELATION TO MENTAL HYGIENE.*

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The field of activity for the general practitioner, it may be said at the beginning of this paper, has no specified boundaries or limitations.—the whole man is ours to study. The general practitioner is not supposed to

*One of a group of papers read at the Virginia State Conference on Childhood and Youth, held in Richmond, November 23-24, 1931.

know all about any particular portion of the body, but he is at one time or another called upon to minister to the complaints, defects and diseases of every part of the human anatomy, and is expected to have a fairly accurate knowledge of them all.

The feeling is pretty general among physicians that nervous and mental diseases and the problems of psychiatry are outside of their sphere, and that the practice of medicine does not include dealing with what we call mental hygiene. I am convinced that this position cannot be reasonably maintained by any thoughtful, careful and conscientious physician. God created man, body, mind and soul. The Great Physician himself administered to all three of these. We, in the performance of our duties as physicians, must as far as possible treat the whole man.

The healthy individual is one who possesses a sound mind in a sound body, which means that good health does not simply presuppose a strong, vigorous body, but a body governed and directed by a normal, well balanced mind. In the study of the body and its diseases we must not overlook the fact that man has a mind as well as a body.

The history of medicine is the story of struggle from darkness and superstition, step by step, through the years, until we find ourselves today as a profession having learned much but still searching and finding much still to be added to our store of information. In the past few years there have been numbers of campaigns for enlightening the public and profession in certain particular aspects of medicine and in reference to certain diseases, as, for example, cancer, tuberculosis, venereal diseases, pellagra, etc.

And now more recently the mental hygiene movement is on. The people must be informed, the medical profession must also be educated and informed, and their active interest and cooperation secured.

It has not been long since it was considered more or less of a disgrace to have tuberculosis, or cancer, or leprosy. "Too often the terms 'lunacy' or 'insanity' conjure up disturbing visions of restraint and violence." In the light of our present knowledge all these diseases are the everyday problems of the general practitioner, and he cannot treat one and reasonably feel justified in neglecting any of the others.

Quoting Dr. E. A. Strecker, of the Jefferson Medical College, "The sooner knowledge of the principle on which psychiatry is founded becomes diffused among the ranks of the general practitioner, the sooner will they learn some very useful lessons which may be applied in their every day practice. Very often in the patient who has mental disease, we have simply a case for diagnosis. From such a point of view, the general practitioner, as well as every other brother specialist and laboratory expert, has something to contribute. There is only one conception that is worth consideration, and that is that so-called insanity is simply a disease and deserves the same careful and general medical attention as other diseases whose cause is in doubt, as, for instance, cancer."

Mental hygiene has been defined as the "science and practice of the preservation of mental health," and would mean study and research finally leading towards prevention and cure of mental diseases. It would seem impossible for the general practitioner to escape the responsibility of informing and educating himself in the care and treatment of this class of cases. A few figures and statistics may help to emphasize this statement:

Dr. D. C. Wilson, who has made a careful survey in this state, tells us that 1 per cent of our population, because of nervous and mental disorders, needs segregation; 2 per cent in addition require special supervision outside of institutions, or about 50,000 in this state outside of hospitals, jails and penitentiaries.

The physicians of this state are, in a large measure, responsible for the present care of this 50,000 or more, for under the present conditions of our modern life, the present unemployment situation, and the contentions and accidents incident to idleness, unrest and dissipation, there is no means of predicting how much these figures may be augmented.

The conditions are no better in other states and are similar to those in our own. The number of patients in nervous and mental hospitals in this country far outnumbers those in all other hospitals combined.

Among the causes of mental disorders, or conditions bearing on mental disorders, we may list heredity, unfavorable environment, physical disorders, diseased foci, convalescence from illness, conditions at certain periods of life, addiction to drugs, alcoholism, epilepsy, luetic infection, etc. These are all important from the standpoint of the general practitioner.

In many cases he alone knows the history, and with the advice and cooperation of the psychiatrist and his own influence with the patient and the family, he can accomplish results that would otherwise be impossible to attain.

In the carrying out of certain prophylactic measures the general practitioner can accomplish a great deal—in advising against the marrying of the physically unfit, those of low mentality, epileptics, and criminals, using his influence in advising sterilization of the same class, advocating proper hygienic laws, regulating marriage, etc.

It seems to me that it is hardly necessary to stress the question of responsibility of the general practitioner in the face of the great need as shown by these figures. There are comparatively few specializing in psychiatry and mental diseases, and of necessity the general practitioner must treat the great majority of these borderline and mental cases outside of institutions. The great need for special knowledge in these cases should stimulate the general practitioner to study and make preparation for treating mental and nervous cases, although many consider this outside of their particular line of work.

The present activities for the prevention and treatment of mental disorders in this and other states are directed toward informing the public and the medical profession and conducting mental clinics for children and adults. I know from personal observation of mental hygiene clinics in this state that the cooperation and hearty support of general practitioners in their various communities are earnestly desired, and that the success of the clinics is largely in proportion to the cooperation accorded by the general practitioner. Any program proposed or adopted for handling the mentally sick outside of hospitals must fail if it is not endorsed and backed up by the general practitioner. At this time when the Department of Clinical Education of the Medical Society of Virginia is endeavoring to provide opportunity for post-graduate education of physicians all over this state we should not fail to stress the importance of holding clinics on this very important subject, and make it possible for every general practitioner to better qualify himself for treating and caring for those who are mentally sick.

In conclusion, let us not forget the thousands outside of institutions needing the intelligent care of physicians, many of whom, if neglected, will later have to be hospitalized, adding to the already heavy economic burden of the state and nation.

STAPHYLOCOCCAL INFECTIONS OF THE KIDNEY WITH SPECIAL REFERENCE TO KIDNEY CARBUNCLE.*

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In the March number of the *Journal of Urology*, I reported a striking case of kidney carbuncle. Since publishing this article a second patient with this interesting condition has come under my care, and it therefore seems worth while to consider these two cases together and to summarize the histories, physical findings and pathological lessions in the 93 instances of kidney carbuncle recorded in the literature.

A carbuncle is one of the end-results of a hematogenous infection of the kidney cortex. The pelvis of the kidney is usually not involved by a carbuncle. It is because the gross appearance of this lesion is almost identical with that of the ordinary carbuncle, which we are accustomed to see on the back of the neck, that it is called a kidney carbuncle.

The staphylococcus is almost always the infective organism and the renal condition can in the majority of instances be proved to be secondary to staphylococcal infections elsewhere in the body, such as furuncles and paronychiae. In other words, a kidney carbuncle is a circumscribed metastatic inflammation of the renal cortex caused by the staphylococcus.

Young reported finding the staphylococcus in 49 per cent of the cases in a series of 356 kidney infections. Although other authorities have found the incidence of this type of infection to be somewhat lower, practically all are agreed that the staphylococcus is one of the commonest causes of acute renal infections. Frequently the staphylococci produce only minute lesions in the kidney cortex and in a short time the infection dies out and the organisms disappear. In such instances the patients are moderately ill for a period of about ten days or two weeks and then make a complete recovery. When, however, the resistance of the patient is not sufficiently great to destroy the staphylococci, the inflammation progresses and the condition becomes more serious.

*Read before the Baltimore City Medical Society, January 22, 1932.

Frequently perinephritic abscesses develop and occasionally, as in the two cases which I am about to report, true renal carbuncles. It is believed by some that the kidneys of patients who have just recovered from an acute staphylococcal infection are particularly susceptible to infections by the colon bacillus. It is not uncommon in an acute renal infection to obtain at the onset of the condition cultures of staphylococcus aureus and at about the same time that these organisms disappear from the urine for colon bacilli to take their place.

Some interesting experimental work by Dyke seems to indicate that the cocci and the colon bacilli are apt to invade different portions of the kidney. In infections by cocci the lesions are usually found in the cortex of the kidney, whereas the colon group of organisms show a predilection for the pelvis and collecting tubules. The cocci usually lodge as emboli in the vessels that carry the blood to the glomerulus. This hypothesis that different groups of organisms show a special predilection for different parts of the urinary tract has also been recently emphasized by Bidgood. However, no very satisfactory explanation for this bacterial selectivity has been presented.

As has been said, the patients who are able to overcome the acute staphylococcal cortical infections usually do so in about two weeks. The onset of the infection is apt to be rather sudden. Severe pain develops over one or both kidneys and a chill promptly follows. Pain is sometimes quite severe, simulating that of renal colic and radiating down the course of the ureter to the genitalia. Bladder symptoms are usually absent as are also nausea and vomiting. A moderate elevation of temperature is the rule. The leucocyte count is raised. The infrequency with which pus is found in the urine is striking. Staphylococci can quite regularly be found in the sediment even though negative urinary cultures are sometimes obtained. This is probably due to the fact that in some cases the bacteria are dead when excreted in the urine. These acute staphylococcal infections run a stormy course during the first week. After this there is a marked improvement of all symptoms. The temperature returns to normal by the 14th day and the pain disappears. Unless some complication develops the patient makes a complete recovery.

Sometimes the clinical course of acute staphylococcal urinary infections is much milder than that just described. Patients are encountered who give positive staphylococcal cultures from both kidneys but whose general condition is apparently excellent, there being no elevation of temperature or prostration. It is possible that in such cases the cocci have involved the pelvis of the kidney and not, as they usually do, that portion of the kidney afferent to the glomerulus. Perhaps it is because of the impossibility of obtaining proper drainage of inflammatory products that patients having lesions afferent to the glomerulus are usually much more seriously ill than those having lesions in the kidney pelvis and collecting tubules.

The treatment of the uncomplicated cases of staphylococcal infections is entirely medical. The patient should be kept in bed at complete rest and fluids forced. As the pathological process does not involve the pelvis of the kidney, cystoscopy and pelvic lavage are of no therapeutic value. While most authorities feel that urinary antiseptics given by mouth are of little proved value, my experience with hexylresorcinol in staphylococcal infections of the urinary tract has convinced me that this drug is often decidedly helpful in coccal infections of the urinary tract, although personally I have never obtained any results from its use in infections due to the colon bacillus. In uncomplicated staphylococcal and streptococcal urinary infections marked improvement often follows the use of intravenous injections of neo-arphenamine. Without going into a detailed explanation of the involved pharmacology, it should be pointed out that it is the neo or formaldehyd radicle of this drug that affects the cocci; ordinary salvarsan is, therefore, in these conditions of no therapeutic value.

The commonest complication that develops in the staphylococcal infections of the kidney cortex is a perinephritic abscess. As soon as the inflammatory process has penetrated the kidney capsule and extended to the perinephritic tissue, we are dealing with a condition that should no longer be treated medically and prompt surgical interference is indicated. In a series of 48 cases of acute staphylococcal infection of the kidney reported by Nesbit perinephritic abscesses developed four times. There are some urologists who claim that the majority of all perinephritic abscesses are sec-

ondary to staphylococcal abscesses in the kidney cortex, and that it is only because the kidney itself is not inspected when these cases are operated on that cortical abscesses are not found more frequently.

A much rarer but quite interesting and important complication that sometimes develops in staphylococcal infections of the renal cortex is kidney carbuncle. A summary of my two cases of kidney carbuncle is hereby presented. The more recent one will be reported first.

J. H., aged 22, white female, was admitted to the University Hospital (Baltimore) on September 25, 1931, complaining of pain in the right flank. In January of the same year the patient had had a large carbuncle on the back of her neck. In February she had developed a dull pain in the right side of her back. There was at that time no fever, no chills, no gastro-intestinal or urinary symptoms. The general examination at that time was negative, except for slight tenderness over the right kidney region. In January the patient had been cystoscoped. The bladder specimen and culture and specimens and cultures from both kidneys had all been negative. A plain X-ray and pyelogram of the right kidney had been taken. These were interpreted as normal. As the examinations had not revealed any definite pathological condition the patient had received no further cystoscopic treatments. During the next seven months she had almost constantly a dull pain in her right side. There were, however, no urinary or gastro-intestinal symptoms. At about the beginning of September her condition rather suddenly became worse and she was compelled to go to bed. She was seen by Dr. Anthony Buchness, who had her admitted to the University Hospital.

Examination—September 25, 1931: The patient appeared to be very ill. Temperature 102°. Pulse 120, respiration 20. The right thigh was held flexed and in adduction. There was definite tenderness over the entire right side of the abdomen and a mass could be felt in the right flank in the region of the right kidney. The percussion note was tympanitic over this mass, showing that there were loops of intestine over it and that it was probably retroperitoneal. The catheterized specimen of urine was negative and also the urine cultures. *Cystoscopic examination:* The bladder appeared normal. Both kidneys were secreting freely. Specimens and cultures from both kidneys were negative. An intravenous differential phthalein showed that in half an hour each kidney excreted 30 per cent—entirely normal figures. The plain X-ray showed a definite mass near the lower pole of the right kidney, but the right pyeloureterogram was normal. In spite of all the negative urinary findings and the absence of bladder symptoms, an operation was decided upon. A pre-operative diagnosis was made of a right perinephritic abscess and the likelihood of finding at operation in addition to this condition a metastatic staphylococcal abscess of the kidney cortex was mentioned.

Operation—September 29, 1931: The usual kidney incision running parallel to and just below the last rib was made. A large perinephritic abscess was opened and some 300 c.c. of thick greenish pus were evacuated. The kidney capsule was greatly thickened. It was stripped from the kidney. In the mid-portion of the anterior surface of the kidney five small abscesses were found, all lying close to each other in a definitely circumscribed area. The lesion strongly suggested a beginning carbuncle. Drains were inserted down to this area and the incision was closed. The cultures taken at operation from the perinephritic abscess and from the small cortical abscesses gave a heavy growth of staphylococcus.

The procedure was done entirely under gas anesthesia. However, immediately after the operation the patient developed a pulmonary condition which necessitated her transference to the "air-conditioning chamber." This pulmonary complication was first thought to be a pneumonia but was later considered by the medical service as an instance of post-operative atelectasis. The patient's condition improved rapidly as soon as she was admitted to the "air-conditioning chamber," and from then on she made a slow but satisfactory convalescence. She was discharged from the hospital on November 17th, fifty days after operation. When she left the phthalein output was found to be 60 per cent, showing that her renal function had not been appreciably affected by the small abscesses in the cortex. Two months later the patient returned for a final examination. She stated that since leaving the hospital she had gained twenty pounds and that during this time she had absolutely no symptoms. Examination showed the incision to be entirely healed. The right kidney was still

palpable but was not tender. A catheterized specimen of urine was negative.

In this case the patient developed pain in her right kidsey region one month after having a carbuncle on the back of her neck and it was not until seven months later that she showed any signs of sepsis, although during this entire period the pain in the kidney region persisted. The particular strain of staphylococcus at the onset of the disease must have been of low virulence and yet sufficiently resistant not to be destroyed by the body's protective forces. It is interesting that the cultures obtained at cystoscopy were sterile, although those obtained at operation showed a heavy growth of staphylococcus aureus. The cocci had apparently remained in the kidney carbuncle and had not filtered through the glomeruli into the kidney pelvis and thence into the voided urine. The diagnosis was made on the history and on the palpation of the perinephritic abscess which could be felt on abdominal examination. The cortical lesion would not have been found if the kidney itself had not been carefully inspected.

A summary of my other case of kidney carbuncle is as follows: F. P., aged 18, white female, was admitted to the Church Home and Infirmary on December 9, 1930, complaining of pain in the left flank. One month before her admission she had had a very severe sore throat, and after she had been sick in this way for about two weeks she suddenly developed pain in the left flank. Nausea was present but no vomiting. The temperature rose to 102°, and the pulse rate to 120. There were no urinary disturbances. The menstrual history was not significant.

On examination in the hospital the patient appeared to be very ill. She complained bitterly of pain in the left flank, held the left thigh flexed, and was unable to lie on the left side. The general physical examination was essentially negative. Careful study of the chest showed no pulmonary changes and the bases of the lungs descended normally on inspiration, although deep breathing caused pain under the left costal margin. Palpation under the left costal margin and over the left kidney region posteriorly elicited slight but definite tenderness. There was none on the right side. Pelvic examination was essentially negative. The temperature on admission was 101.4°, the pulse rate was 120, and the leukocyte count 9,000. The urine contained no albumin, sugar, pus or red blood cells. In spite of the absence of any urinary symptoms and the negative urinary examination it was my impression that we were dealing with some pathological condition in or around the left kidney and for this reason a cystoscopic examination was decided on.

Cystoscopic examination — December 10, 1930: A No. 9 Kelly cystoscope was used. The bladder appeared normal. Both kidneys were catheterized with No. 8 opaque catheters. No pus was found in the specimens coming from either kidney, and negative cultures were obtained from both sides. A differential intravenous phthalein was then carried out. The dye appeared from the right kidney in seven minutes. In the first half-hour the right kidney excreted 45 per cent phthalein and in the second 15 per cent. From the left kidney the dye did not appear for thirty minutes, showing a marked lengthening of the normal appearance time, and in the next thirty minutes the left kidney excreted only 15 per cent phthalein. The plain X-ray was negative, but the pyeloureterogram of the left side was of decided interest. The upper calyx was unusually long and the middle calyx did not fill with sodium iodide, so that a filling defect was produced such as is seen in cases of kidney tumors. After seeing the picture we had obtained, we immediately re-injected sodium iodide and took a second picture which gave similar results. This repetition of the pyelogram ruled out the possibility of an error in technique. The ureterogram showed a definitely dilated ureter, strongly suggesting that there was a stricture of the ureter at a point a little above its entrance into the bladder.

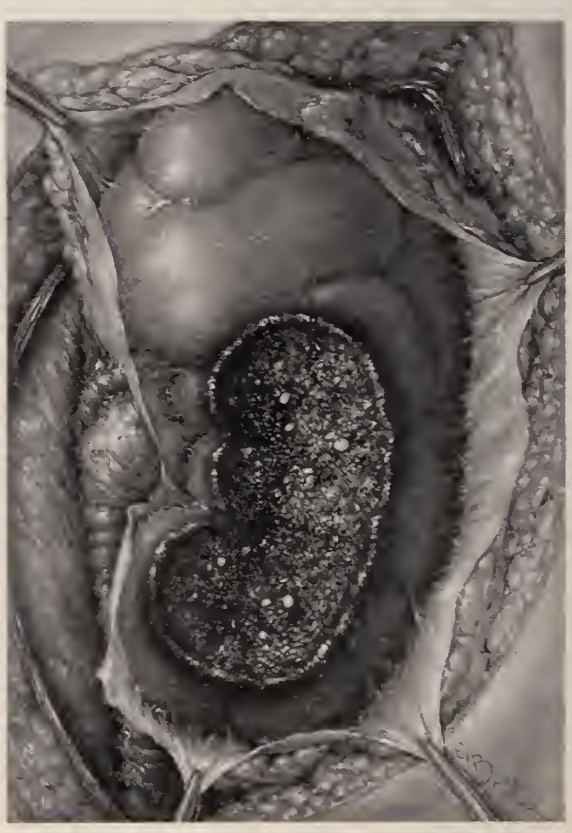
The course in the hospital was carefully watched and the patient was examined daily. The pain in the left flank continued without lessening, but the urine remained negative and no urinary symptoms developed. On December 15th, I was able to feel, for the first time, a mass in the left kidney region. The temperature had been gradually getting higher until it had by this time reached 102.8°, and the leukocyte count had risen from 9,000 to 16,000. Thinking that the patient had a perinephritic abscess with possibly some lesion in the kidney itself, an immediate operation was decided upon.

Operation—December 15, 1930: Under gas anesthesia the usual kidney incision was made, the muscles were divided and the lumbar fascia

opened. A small amount of sero-purulent fluid was found between the fatty and fibrous capsules of the kidney, showing that some perinephritic infection was present. This fluid contained flakes of pus in it, but it was thin and watery, not thick and creamy. The kidney was then delivered into the incision. It presented a very striking appearance. The true capsule had been separated from the kidney by sero-purulent fluid of the same type as that found on the outside of the capsule. The capsule was opened and divided over the entire course of the kidney and the kidney itself inspected. On its anterior surface, extending from a little above the mid-point down almost to the lower pole, there was a lesion which in appearance was identical with a carbuncle such as is seen on the back of the neck. A raised circular area formed the outer border of the lesion. This outer border was dark purple in color and definitely indurated. The center of the lesion showed numerous suppurating points and a depressed crater, which was quite soft to the touch. The rest of the kidney seemed somewhat congested but showed no other abscesses. The lobulations of the entire kidney stood out unusually clearly, suggesting the fetal type of kidney. The pelvis was small and normal. There were no stones present.

I was at first undecided whether to remove the kidney or whether to simply strip back the true capsule and drain the carbuncle. As the patient was young, in very good general condition, and as the differential phthalein test had shown that the involved kidney was doing considerable work, I decided not to do a nephrectomy but to drain the carbuncle; it would have been almost impossible to resect it as it involved such a large portion of the anterior portion of the kidney. As has been said, I had already split the entire length of the true kidney capsule. No incision was made in the kidney; it was returned to the renal fossa and drains were placed down to the carbuncle. Very fortunately for the patient, Dr. Guy Hunner happened to be nearby and I at once called him in to see this unusual lesion. His advice that I treat the patient conservatively played a large part in causing me to decide to save the kidney. The drawing by Miss Elizabeth Broedel of the carbuncle as it appeared at operation was made from the descriptions of the lesion given her by Dr. Hunner and myself. The culture taken at operation from the carbuncle yielded a heavy growth of staphylococcus aureus.

The patient was very ill for some time after the operation. It was necessary to dress the incision daily, as it was of the utmost importance that free drainage be maintained from the kidney to the outside until the carbuncle had healed. For three weeks the patient had an evening temperature of over 100°, and frequently it was considerably higher. On two occasions she had chills and her temperature



Anterior surface of kidney showing the carbuncle.

The lesion extends from a little above the mid-portion of the kidney almost to the lower pole. A raised circular area forms the outer border of this lesion. The center of the lesion shows numerous suppurating points and a depressed crater. The rest of the kidney is somewhat congested but shows no other abscesses. The lobulations of the entire kidney stand out unusually clearly, suggesting the foetal type of kidney.

went to 103°. We interpreted these exacerbations as being due to some obstruction in the drainage, for always after thorough dilatation of the drainage tract the temperature would come down again. On the twenty-third day the evening temperature for the first time came down to 99°, and from then on the convalescence was uncomplicated. She was discharged from the hospital with her incision healed on the fifty-third day after her opera-

tion. We were fortunate in having available in the laboratory of the hospital a staphylococcal bacteriophage with which Dr. V. H. Norwood had been working. The incision was washed out daily with normal salt solution and 10 c.c. of this bacteriophage were injected through a small rubber tube down to the region of the carbuncle. It seems not unlikely that this accessory treatment played a considerable part in bringing about the recovery of this patient. Certainly the absence of any secondary staphylococcal infections in and around the edge of the incision was probably due to the use of the bacteriophage, for the development of secondary abscesses around the incision has been one of the complications frequently reported in other cases of carbuncle of the kidney that have been drained.

An intramuscular phthalein test done a few days before the patient left the hospital showed that in two hours she excreted 60 per cent phthalein, a normal figure for the two kidneys. After the operation there was never at any time any pus or albumin found in the urine. It is, therefore, evident that in this particular case the correct procedure was carried out and that by simply draining the carbuncle we saved a kidney of relatively good function. However, it is probable that if we had performed a nephrectomy the convalescence would have been shorter and that the patient would have been saved the numerous painful dressings that were necessary in order to maintain free drainage down to the kidney.

In this case the particular strain of staphylococcus must have been extremely virulent for in a few weeks a young woman, whose general condition had been excellent, developed an unusually large renal carbuncle. Probably her youth and strong constitution played a large part in bringing about her recovery.

A rather thorough study has shown that, including the cases just recorded, ninety-three instances of kidney carbuncle have been reported by thirty-nine different authors. Only a small number of the articles on this subject have been written in English and some of the very best ones have been published by Russians. Those by Smirow, of Leninograd, and by Rjasanzewas are particularly instructive.

Carbuncle of the kidney is encountered most frequently in patients between the ages of twenty and forty. The youngest patients with this condition of whom we found records were both ten years of age. One was a boy and the other a girl; both recovered after operation. The oldest patient in this series was a man of fifty-six. He died in twenty-four hours after operation and at autopsy it was found that his was one of the very rare cases in which a carbuncle had developed in both kidneys. Our statistics show that the average age of women with carbuncle of the kidney is five years below that of the men.

It is interesting that of the ninety-three instances of carbuncle fifty-seven were found in males and only twenty-three in females. In thirteen cases the sex was not recorded. The greater susceptibility to this condition of the kidney of the male, and especially the middle-aged male, may be explained by that fact that not infrequently in men there is some back pressure on the kidney due to obstruction from the prostate and lower urinary tract which reduces the resistance to infection of the kidney cortex.

There is a slight difference for the two kidneys as regards incidence. In this series the right kidney was involved in forty-three instances, the left in twenty-nine. In eighteen cases the side was not recorded. There have been only three records of carbuncles in both kidneys. Two of the three patients with bilateral carbuncle died, and it is to be noted that they were the oldest patients in this series, one being fifty-six and the other fifty-five years old. In the third instance the age of the patient was not given, but the history is of interest. A carbuncle of the kidney was drained and five weeks later a carbuncle in the other kidney was diagnosed and also drained. The patient made a complete recovery. This case was reported by Stuckey, a Russian observer.

It is surprising that the number of carbuncles of the kidney that have been observed is so small when one considers the frequency of boils, carbuncles, and paronychiae, all of which may act as primary foci from which staphylococci can be transported to the kidneys. A few urologists feel that probably a large number of these kidney lesions occur, but that only a small percentage of them are diagnosed. A small carbuncle may develop in the kidney cortex, penetrate the kidney capsule and, after causing a perinephritic abscess, may itself heal up when simple drainage of the perinephritic abscess is carried out.

Probably perinephritic abscess frequently develops from carbuncles. Indeed, there are some who feel that all perinephritic abscesses

arise in this manner, although the cortical lesions are not always detected. Certainly, a sufficiently large percentage of these cases do develop in this way to make it imperative that in all operations for perinephritic abscess the surgeon should carefully inspect the kidney for cortical suppuration.

Microscopic sections of a kidney carbuncle show lymphocytes, plasma cells and polymorphonuclear leucocytes. Staphylococci can generally be seen scattered through the tissues. It is often possible to recognize the individual minute abscesses by the strands of connective tissue that separate them from each other.

It is not clearly understood why in children pyogenic infections of the skin and subcutaneous tissue should metastasize to the bone and cause osteomyelitis, whereas in adults they are primary foci for metastatic lesions in the soft parts, particularly the kidneys. Nor is it understood why the staphylococcus should be able to get a better foothold in the kidney cortex than any other pyogenic organism. It has been stated, however, that the power of the staphylococcus to break down urea and to use its split products for its maintenance and growth has something to do with this characteristic.

In the ninety-three recorded cases of renal carbuncle there was in seventy-six instances a definite history of a primary focus from which organisms could be transported to the kidney, and in three additional cases there was a history of trauma to the side on which the carbuncle developed. Twenty patients gave a history of carbuncles of the skin and subcutaneous tissue, thirty-four of furuncles, fifteen of superficial infections, one of an acute sore throat, and four, including one of my patients, of a respiratory infection developing shortly before the onset of the kidney carbuncle. Twelve of the carbuncles were on the back of the neck, three on the back, three on the buttocks and in one instance the location was not mentioned. In the cases in which furuncles acted as the primary foci they were found on the neck six times, on the head three times, and on the forearm three times. The primary furuncle was found once in each of the following locations—the nose, the foot, the thigh, the suprapubic region, the labia majora and the penis. In sixteen cases the site of the furuncle was not given. In the fourteen superficial infections recorded as foci for the kidney carbuncle, paronychiae were observed four times and infections of the finger five times. In one instance each an abscess of the scrotum, felon of the thumb, tonsillar abscess, suppurative parotitis, suppurative orchitis and an abscessed tooth were recorded as the primary foci. Neff recently reported the case of a man who developed a carbuncle of the kidney following a periostitis of the sternum from which a staphylococcus had been grown. The cases in which respiratory infections acted as primary foci are of special interest to me, because in one of my cases of carbuncle of the kidney there was a definite history of a preceding respiratory infection. Smirow feels that respiratory infections are just as apt to act as primary foci as the superficial staphylococcal invasions, but including my case there are only four instances recorded in which the history of a preceding respiratory infection is given.

As has been said, a kidney carbuncle is one of the end stages of a very severe staphylococcal infection of the renal cortex. Sometimes it is evident almost from the onset of the disease that one is not dealing with the ordinary type of staphylococcal infection that usually clears up in about two weeks. High fever and marked prostration may be suggestive, but seldom does one suspect the presence of a renal carbuncle sufficiently strongly to advise operation until marked tenderness develops over one kidney. If a mass become palpable in one flank, operation is indicated, but often the development of this mass means that the infection has already extended to the perinephritic tissue.

A patient, whose case was reported in 1905 by Israel, had the most acute onset of symptoms of any in this series. This man, thirty-seven years of age, had had a carbuncle on the neck for twenty-three days when he received a severe blow in the left side. Half an hour later severe pain began in the left flank, and at operation a few days after a carbuncle was found involving the middle third of the posterior surface of the kidney.

The symptoms in renal carbuncle occasionally come on very gradually. Medical treatment is instituted but at the end of two weeks the temperature does not begin to fall and it becomes evident that the patient is very seriously ill. Cystoscopy may be helpful in making the diagnosis, for in practically every instance in which a differential phthalein was carried out, there was a delay in the appearance of the dye from the affected side and the

excretion of phthalein from the kidney containing the carbuncle was less than from the other.

Pyelograms have been taken in only sixteen cases of renal carbuncle, including my two cases. This is, of course, largely due to the fact that the attending urologists did not wish to subject extremely ill patients to any examinations that were not absolutely necessary. However, the results obtained in these sixteen cases were of decided interest and, unless the patient's condition absolutely contraindicates it, it would seem that a pyelogram should be obtained, since it may be of great help in making the diagnosis. In twelve of these sixteen cases some abnormality could be observed in the pyelogram. In the case reported by Mathe and in one of my cases the pyelograms were almost identical. Both showed an elongation of a primary calyx with a filling defect medial to this primary calyx, giving a picture not unlike that caused by a neoplasm. The explanation for this picture is that the cortical carbuncle presses on one of the calyces, shutting it off and thus preventing the sodium iodide from entering. It is of interest that in four of the sixteen patients on whom pyelograms were taken changes were noted in the ureter on the side on which the renal carbuncle was found. In Kretschmer's case and in my own the ureter was dilated. In Mathe's case there was kinking at the ureteropelvic junction.

The absence of bladder symptoms is one of the characteristic features of these cortical lesions and is a factor that increases the difficulty in diagnosis. Only a few patients complain of polyuria: dysuria and hematuria are almost never present unless in addition to the carbuncle there is some other urological complication.

The early diagnosis of carbuncle of the kidney can frequently be made in the case of a patient who is known to have recently had a boil, carbuncle or other staphylococcal infection, who is complaining of pain in one flank, who is extremely ill with a high septic temperature, who on examination shows definite tenderness under one costal margin but whose urine contains little or no pus. Nevertheless, one is often left in uncertainty and, as a matter of fact, a correct diagnosis was made in only a small percentage of the cases reported. Indeed, it is at times impossible to differentiate a carbuncle of the kidney from the acute septic embolic kidney, which is studded with small abscesses, and from the cases of perinephritic abscess. After all, the differential diagnosis between carbuncle of the kidney and perinephritic abscess is only of academic interest. In both groups of cases an operation is indicated, but it must be emphasized that in all cases of perinephritic abscess the kidney itself should be inspected to see if there is not a carbuncle present in addition to the perinephritic infection.

Sometimes more serious mistakes in diagnosis may be made. Patients sometime continue to have an elevation of temperature for months before there is any indication of renal disease. Such cases are apt to be diagnosed influenza, or some respiratory infection, as happened in four patients in this series. Three patients with carbuncles of the right kidney were thought to have acute appendicitis and subjected to unnecessary abdominal operations.

The details of the operative findings are not fully given in all the reported cases, but I have collected about all the information that is available. As has been said, in forty-three instances the carbuncle was found on the right side and in twenty-nine instances on the left. In the rest of the cases the side of the involved kidney was not mentioned. In only three instances were carbuncles found in both kidneys and it is especially interesting that in only three cases were two carbuncles found in the same kidney. This finding somewhat strengthens the contention of those who feel that carbuncles of the kidney should be treated conservatively and not by nephrectomy.

In forty-eight of the ninety-three cases there was a definite note that a perinephritic abscess was present. Probably in many other cases there was a perinephritic involvement but the condition was not recorded. In a few cases where there was no perinephritic involvement the carbuncle was not detected until the kidney was carefully palpated through a normal-looking kidney capsule. The capsule was noted to be definitely thickened in fifty instances. In my second case the capsule appeared fairly normal. A factor of interest in this case was that purulent fluid was present under the capsule and completely surrounded the kidney. The presence of this subcapsular fluid, I believe, has not been mentioned in any other case.

The kidney itself was described as being definitely enlarged in only twenty-nine of the ninety-three cases in this series. This demon-

strates the fallacy of expecting the kidney to be so enlarged that it must be palpable before one can be certain that it is the seat of disease. When a mass can be felt in the flank, it often means that penetration through the capsule has occurred and that a perinephritic abscess has developed.

The poles, and especially the upper one, are apparently the sites of predilection for renal carbuncles, as this lesion was recorded as being in the upper pole twenty-eight times and in the lower fifteen times, while it was encountered only twelve times in the mid-portion of the kidney. It was mentioned as being on the anterior surface of the kidney in nineteen and on the posterior surface in thirteen cases.

Positive cultures were obtained at operation directly from the carbuncle in sixty-eight cases. It is not possible to tell from the records whether cultures were taken in the other twenty-five cases, but there is not a single mention in any article on this subject of a negative culture being obtained from a renal carbuncle. Staphylococci were the organisms grown in sixty-six of the sixty-eight positive cultures. In one of Kretschmer's cases the colon bacillus was found to be the infective organism. Jaffe, in one of his patients, a man fifty-five years of age with a gonorrheal urethritis, found gonococci in the renal carbuncle which developed later. In forty-eight instances the aureus vavariety of staphylococcus, in three the staphylococcus albus was grown, and in fifteen instances the type of staphylococcus was not reported.

Treatment

Although there has been an entire unanimity among those who have written on this subject that an operation is indicated as soon as the diagnosis is made, there have been great differences in opinion as to what procedure is preferable. Many writers, among whom should be mentioned Voss and Colmers, have strongly urged a nephrectomy in all cases of renal carbuncle. Indeed, Colmers removed the kidney in both of his two patients who happened to be only ten and twelve years of age. Other authorities, however, have been just as insistent that, whenever it is possible, the kidney should be saved and a more conservative operation be chosen. The conservative operation has usually consisted of incision into the renal carbuncle and drainage, but in a few instances other operations have been employed. In one case Israel excised the portion of the kidney that contained the carbuncle and the patient recovered. This operation was also performed by Barth on one patient and by Reschka on three patients. The latter surgeon feels very strongly that excision of the carbuncle is the operation of choice. Neff was able to enucleate with his finger the carbuncle in his two patients. Köhler, in two of his cases, made many small incisions into the carbuncle and into the surrounding renal tissue and then thoroughly saturated the kidney with a 2 per cent solution of rivanol. In my own case, in view of the fact that it would have been impossible to excise the carbuncle because of its size, the kidney capsule was incised throughout its length and drains were put down to the carbuncle. After operation, by irrigating the wound through a rubber drainage tube the carbuncle was kept constantly bathed with a solution containing a staphylococcal bacteriophage.

Only five patients in this series failed to receive operative help, and three of these died. In the case of one of the two patients that recovered, intravenous mercurochrome was used. Although the history of the case is suggestive, without an operation or autopsy, absolute proof of the existence of a carbuncle is, of course, lacking. In the other case, the carbuncle spread to the perinephritic tissue, forming an enormous abscess which later on perforated the colon. Fortunately, the patient did not develop a peritonitis and after the abscess had emptied into the colon she recovered. In two of the three patients that died without operation a similar sequence of events happened as in this last case, except that the abscesses perforated into the peritoneal cavity instead of into the colon and the patients died of peritonitis. It would seem that non-operative treatment is never justified in a case of carbuncle of the kidney.

A careful study was made of the results obtained in this series of cases by radical and conservative treatment, respectively. In forty-one patients a nephrectomy was performed at the first operation. Three of these patients died, giving a mortality of 7.3 per cent. Grouping the different conservative operations together, we find that of forty-seven patients five died, giving a mortality of 10.6 per cent. Four of these five fatal cases were treated by incision and drainage of the carbuncle. In the fifth an enucleation of the carbuncle was first carried out and later at a second operation a nephrectomy was performed. Two of the five

cases in which a nephrectomy was carried out after a primary conservative operation ended fatally. All of the five patients treated by excision of the carbuncle recovered, as also did the two patients treated by incising the kidney and soaking it in 2 per cent rivanol. In Aschner's and in my two cases decapsulation and drainage down to the carbuncle cured the patients.

My own feeling after studying the above figures and reviewing in detail the ninety-three cases of renal carbuncle in the literature, is that no hard and fast rules can be drawn up for the precise operation indicated, but in general the following recommendations may be appropriate:

As soon as the diagnosis of carbuncle of the kidney has been made, prompt operation is indicated. However, if the patient's condition does not contraindicate it, a differential phthalein should first be carried out, as this test may be a great aid to the surgeon in deciding whether or not it is advisable to remove the involved kidney. A low phthalein reading for the uninvolved kidney indicates that the surgeon should, if possible, save the one containing the carbuncle. A low phthalein output from the kidney containing the carbuncle does not necessarily mean that this kidney has been irreparably damaged and must be removed, for in many instances after the carbuncle has been drained the function of the kidney has returned to normal. The size of the lesion does not in itself decide the proper operative procedure unless at operation a very large part of the kidney is found to be involved by the carbuncle. However, as was true in one of my cases, the carbuncle may be so large that excision of the portion of the kidney containing it is not feasible, and if the operator intends to be conservative, he can do no more than incise and drain the carbuncle. It is probably a good rule never to perform a nephrectomy except under one or two conditions: (a) if the general infection is so overwhelming that it is absolutely imperative to remove as much of the infected tissue as possible, a nephrectomy is indicated. For instance, if the patient is having chills and a very high fever and is showing signs of septicemia, his best chance of overcoming the infection probably lies in removal of the kidney; (b) if a patient has good renal function in the uninvolved kidney and is in poor general condition either through advanced age or other pathological conditions in addition to the renal carbuncle, it is wise to remove the kidney so as to shorten the convalescence as much as possible.

It is hard to decide which of the different conservative operations that have been tried is apt to be most efficient. When it is possible to enucleate the carbuncle with the finger, as Neff was able to do in his two cases, this method of treatment seems to be ideal, but this can be accomplished only in rare instances. To me personally, excision of the portion of the kidney containing the carbuncle does not appeal because necessarily it is followed by considerable hemorrhage and introduces many bacteria into the blood stream. However, all of the five patients treated in this manner recovered. In my cases I simply freed the true capsule from the kidney and left drains down to the carbuncle. One is not justified in drawing conclusions from two cases, but in treating my next patient with carbuncle of the kidney, unless a nephrectomy is indicated, I shall try to enucleate the carbuncle with my finger, and, failing in this, shall carry out the following procedure: I shall make no incisions directly into the carbuncle nor attempt to excise it, but, after splitting the true capsule, shall drain directly down to the carbuncle. During the convalescence I shall see to it that the incision heals up from the bottom and that free drainage down to the kidney is maintained for a period of at least several weeks. If a staphylococcal bacteriophage is available, I shall use it, and shall hope that it will be as effective as the solution that Dr. V. H. Norwood furnished me with in the treatment of my first case of carbuncle of the kidney.

Summary

Two cases are reported showing kidney lesions of an unusual character. Moreover, the consideration of these cases in this paper has brought out two points, which we feel are of distinct clinical value: First, the importance of inspecting the kidney itself when operating for perinephritic abscess has been emphasized. Secondly, the attention of the general practitioner has been called to that fact that when he has a patient under his care with a carbuncle of the neck and this patient suddenly develops pain in one kidney region, the possibility of a serious lesion of the kidney cortex should be considered even though there are no bladder symptoms and the urine contains no pus or blood.

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DETACHMENT OF THE RETINA—DIFFERENTIAL DIAGNOSIS.*

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Dr. Simpson has pointed out in his paper that the idiopathic or simple detachment of

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the retina is almost always associated with a tear in the retina. This type of detachment is amenable to treatment in a fairly high percentage of cases. Normal central vision and an essentially normal field may be retained in many cases where treatment is instituted early. Therefore, the early diagnosis of detachment, and the type of detachment with which one is dealing, are most important for a successful end-result.

Detachment of the retina may result from inflammatory processes in the retina, choroid or vitreous, from tumors of the choroid or retina, or from choroidal hemorrhage. It may occur in systemic diseases, particularly nephritis.

The most favorable type of detachment of the retina is that associated with the retinitis of pregnancy. There is a sudden onset, a marked effusion, and if the cause is removed, a sudden relief. Detachments are met more commonly in this type of retinitis than in any other type of renal retinitis. These detachments are due to vascular degeneration and a generalized tendency to edema.

Choroidal exudation may result in an effusion, which pushes the retina away, thus producing a detachment much larger than the area of choroid involved. Careful examination will reveal evidences of a deep inflammatory process—such as deposits on the posterior surface of the cornea, and cellular elements in the aqueous.

Many so-called spontaneous detachments may be found to be due to uveal disease if a careful search is instituted.

Detachment of the retina has been reported in sympathetic ophthalmitis. The actual cause of the detachment is almost certainly a choroidal exudate.

Vogt considers that hole formation is rare in detachments due to choroidal inflammation, and that the recognition of such detachments is simplified if one finds other signs of inflammation.

Detachments due to choroidal effusion have a better prognosis than those due to retinal and vitreous degeneration. The lesion which produces the detachment produces a reaction which tends to cure it.

A choroidal sarcoma may simulate closely a simple detachment and because of the malignancy of the tumor early and accurate diagnosis is imperative.

The appearance of the detachment may help to distinguish it from the simple form. This detachment usually has a more solid appearance and is less apt to be tremulous. A tumor usually arises abruptly from the surrounding fundus and its surface is rarely thrown into folds. Later, however, when an effusion has led to a more extensive detachment the difficulty in diagnosis is greater. The retina overlying the tumor itself may show a yellow or yellowish-brown color—and the subretinal fluid frequently appears yellow.

Field defects or alterations of refraction may be the earliest symptoms. Distortion of the anterior ciliary veins may be noted in the region of the tumor if it is situated anteriorly —or if it interferes with the outflow in the vena vorticosae. A gradually increasing area of blindness is very suggestive of a neoplasm.

Lister holds that the presence of a hole excludes the presence of a growth, and that "if one can substantiate a history of sudden loss of sight from detachment, even though a hole cannot be seen, we know that a hole must be present, and we can with equal certainty exclude growth." This statement cannot be taken too seriously, but in the presence of a tear in the retina and no evidence of a tumor one is justified in being conservative.

Transillumination is invaluable in detecting the presence of a tumor even though the detached retina may be extensive. Any tumor formation, even though unpigmented, will prove more or less opaque and so cast a shadow. Several methods of transillumination have been described—all of which have their usefulness depending upon the area to be examined.

As a rule the tension of an eye containing a detachment of the retina due to a choroidal tumor becomes raised. The stage at which this occurs depends more on the site than on the size of the tumor. Tension may be raised in retinal detachment even though no neoplasm is present. Choroidal sarcoma with low tension occasionally occurs as a result of an iridocyclitis or degenerative change in the tumor.

Metastatic carcinoma may produce detachment of the retina. A careful history and physical examination will make the diagnosis less difficult.

In infants simple detachment of the retina may simulate retino-blastoma. Intraocular hemorrhage is frequent in the new-born. Lachman reported a case of an infant whose eyes were excised because of bilateral detachment

simulating glioma; the detachment was due to hemorrhage.

Detachment of the retina may result from a contusion of the globe with the absence of a tear in the retina. This probably is the result of injury to the choroid followed by a serious effusion or hemorrhage. The prognosis in this type of detachment is favorable.

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THE PHYSICIAN'S PART IN DIPHTHERIA CONTROL.*

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It is now a well accepted fact that the incidence of diphtheria in a community cannot be greatly decreased by quarantine and isolation of recognized cases, the reason being that infection is frequently spread by mild unrecognized infections and carriers. It is also a well established fact at the present time that the incidence of diphtheria *can* be greatly reduced, if not eliminated entirely, by active immunization of well children. Small reductions in incidence usually follow immunization of 20 or 30 per cent of susceptible children; marked reductions follow 50 per cent immunization; and almost complete elimination follows 75 per cent immunization. As the successful control of diphtheria lies in the field of active immunization and not in quarantine, this paper deals only with the physician's part in active immunization.

Experience has shown that coordinated effort is required to succeed in immunizing a large proportion of the children of a community. Large scale immunization cannot, for a number of reasons, be done by practicing physicians alone, and cannot be done by health authorities without the cooperation of physicians. A program involving two groups is, therefore, required and the part played by the physicians' group obviously depends on the kind of program arranged by the health authority.

Suppose that the health authority sets up a program aimed to immunize each child early in the preschool period, probably at six months to one year of age. The well-to-do child is to be immunized as a private patient in the doctor's office, the indigent child in health department clinics, and the semi-indigent child in either of these places but under an arrangement providing for immunization at nominal cost. What is the doctor's part in helping to immunize each of these three classes of children?

As to immunization in the doctor's office, the physician may feel that his obligation is to immunize the child brought to him and that the health officer's obligation is to issue propaganda which will make parents bring in their children. This sounds logical and simple but it does not take into account the important position of the physician as the advisor of his patients. Is it not better for the relation of the patient and the physician if the public receives advice on this and other "keep-well" services largely from their own physicians rather than from the health officer? Should not the health officer say "Your child need not have diphtheria—ask your physician about protective treatment"? This kind of a statement sends in the patients, but leaves much of the educational work to the physician. It seems to me that the physician's part, therefore, is, not only the giving of the treatments, but explaining to the inquiring parent such items as the nature of the substance used, reactions, dependability, permanence and proper age.

To take further advantage of the physician's influence over his patients, health officers have devised schemes for sending educational messages to the public through the physicians. These may take the form of a notice on the wall of the physician's office, a pile of leaflets on the waiting room table, a slip mailed in the envelope containing the physician's statement, or a form letter sent when a child is six months of age. In order to avoid appearing as an advertisement of the physician, all of this material should appear under the health department's or medical society's name. When other forms of educational material are being circulated, there is no danger of this material appearing as anything but a part of the general diphtheria immunization campaign.

Unfortunately, the plan of immunizing children in private practice sometimes receives a set-back because a few parents complain that they took their children to their doctor and were told that he did not wish to give the injections. To prevent this difficulty, there should be an understanding that all physicians whose practice includes the care of children will stand ready to immunize at reasonable

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charge any of the children of their practice who are brought to them.

The immunization of *indigent* children is a responsibility of the Health Department and the only question is whether all of the work should be done through free clinics or whether the physicians should be asked to treat indigent patients as part of their practice and receive a small reimbursement of about 50c per injection as compensation. The latter method has been tried in Detroit and, with intensive educational work of Health Department nurses, urging parents to go to physicians' offices, it has proven very effective—though expensive. Such a plan might be tried in rural areas where the population is too scattered to justify free immunization clinics and where one physician covers a small area and his practice includes almost all the people in the area.

The most difficult part of a diphtheria immunization program is that of reaching that part of the public which lies between the well-to-do and the indigent. This is the large group which welfare workers are puzzling over and which physicians so often see as patients who can pay for office visits, but not for hospital treatment. In diphtheria immunization, they are the parents who can pay the fee for immunization if reduced to 50c or $1.00. In a great many instances they can pay this only with such sacrifice that they cannot be induced to bring their children unless the treatments are entirely free. The only way to be successful in reaching this intermediate group and at the same time avoid drawing the public away from established contact with their own physicians is for the Health Department and the physicians to work out a plan aimed directly to reach this group at low cost. One plan which has been tried is that of asking the doctors to set aside separate office hours so as to immunize groups of children at one time and thus avoid repeated interruptions to their other practice. This arrangement amounts to establishing temporary health centers in the doctors' offices. When large numbers of children are brought in, a public health nurse may be assigned to assist the physician. Another plan might be to set up low cost immunization clinics and to have children sent in to them only on the request of their own physicians so that the families would thus retain their connection with their regular physicians.

Problems of this kind have to be worked out for each community. No scheme can be drawn up in advance and expected to be perfect, and a successful plan can be established only by persistent effort and by experimenting with different methods. The health officer and a committee or representative of the Medical Society are the ones in a position to do this, but they will succeed in setting up a satisfactory program only after putting in hard work over quite a period of time.

REMOVAL OF WENS—A SIMPLE TECHNIC.

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Wens, or sebaceous cysts, are of fairly common occurrence, most often perhaps about the head or neck, and, aside from their unsightly appearance, occasionally break down and degenerate into malignant conditions. As a rule the smaller they are the easier they are to remove without rupture of the sac. Wens which have enlarged to the size of a hickory nut or a walnut usually have become quite thin-walled and it is quite difficult ordinarily to remove these larger ones without premature rupture of the sac and expulsion of the cheese-like contents, which is followed often by more or less piece-meal removal of the sac wall. Having had quite a few of these larger wens to rupture in the course of removal, in spite of the most careful handling, search was made for a more efficient method of handling.

The skin over and about the wen is painted over with any suitable antiseptic and then infiltrated with a local anesthetic. Novocain may be used. An excellent local anesthetic for this work is composed of ¼ per cent butyn; 1 per cent antipyrin; 1 per cent (1-1000) epinephrin.

After a suitable wait for the anesthetic to become effective, the skin over the wen is carefully incised either with the cutting current needle, or with a coagulation knife hooked up to high frequency machine. This is bloodless and thus enables the operator to incise down to the sac wall, but without plunging the scalpel blade into the wen proper.

The wen usually is ruptured, if at all, during the subsequent efforts to dissect it free from the overlying skin and connective tissue.

It has been found that the elevators employed in submucous resection of the nasal septum permit the wen to be completely freed from its attachments without the slightest diffi-

culty or danger of rupturing the sac. Using the sharp end of a Freer's submucous elevator carefully at first, the skin over the wen is slightly separated on each side of the incision; then further separation is made with the blunt end of a Freer instrument, after which the separation is easily completed with the double-ended Myerson elevator, which has a sma ' sphere on one end and a slightly larger sphere on the other.

Too often operators confine the use of a given surgical instrument to the special piece of surgery for which it was designed, where, with a little ingenuity, that same instrument may be employed successfully in a number of other situations. I know that since improving the wen-removal technic, as above described, sac ruptures have been virtually done away with.

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TUBERCULOUS MENINGITIS IN CHILDREN: A REVIEW OF THIRTY-THREE PROVED CASES.*

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A statistical study of thirty-three proved cases of tuberculous meningitis occurring among infants and children has been made. The case histories were obtained from the records of the Cincinnati Children's Hospital and the Pediatric Department of the Cincinnati General Hospital between the years 1925 and 1930. By this study I propose not to add something new to the subject of tuberculous meningitis but simply to emphasize in an analytical manner certain earlier clinical manifestations of the disease which aid materially in making an early diagnosis and prognosis.

An early diagnosis of tuberculous meningitis is always hard to make especially in the absence of any history of exposure to infection with the specific organism. Even in moribund cases the diagnosis is difficult without accessory clinical measures such as ophthalmoscopic examination and examination of the cerebrospinal fluid, for there are many forms of meningitic diseases associated with increased intracranial pressure, clear fluid yielding no growth of organisms on ordinary culture media, and a moderately low cell count, which are not tuberculous meningitis.

In the initial stages there are no definitely diagnostic symptoms. The onset is typically insidious. It may simulate many other conditions, especially the meningism of acute infections as well as other types of meningitis or encephalitis or poliomyelitis. It should not be considered that the child's ailment is nothing more serious than chronic indigestion.

TABLE I

Number of Cases Showing as First Symptom:	
Vomiting	8
Headache	7
Stupor	6
Restlessness and Irritability	5
Spasticity	2
Pain in Neck	1
Fever	1
Anorexia	1
Diarrhoea	1

The clinical diagnosis was corroborated in each case of this series by either demonstrating the specific organism in the cerebrospinal fluid or at necropsy.

AGE. It has been repeatedly demonstrated the remarkable predilection the disease has for young children and infants. Thirty and three-tenths per cent of this series occurred in infants, 51.5 per cent in children between the ages of two and five years and 18.2 per cent in older children. The average age was 37.9 months. The youngest case occurred in an infant of eight months and the oldest in a child of thirteen years. In the Holt and Howland series the majority of cases appeared in infants under one year of age. Peterman and Kahn[1] found the longest series between the ages of one and three years. Griffith and Mitchell found the greatest number of their cases between the second and third years, as did Pearson and Wyllie. Neff, in Abt's system of Pediatrics, states that 60 per cent of tuberculous meningitis is seen in children under three years of age.

EXPOSURE. Particular effort was made in taking the histories to ascertain contact in any form with individuals having pulmonary tuberculosis. There was a definite history of contact in about 42 per cent of the series. A history of active pulmonary tuberculosis in a member of the immediate family was obtained in 35.4 per cent. Myer[2] reported 105 cases in children of which 73 per cent gave no history of contact. These figures are similar to those of H. Koch[3] who in a study of seventy-five cases found only 23 per cent having tu-

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bercular parents. In the Herben and Asserson[4] series of 135 cases there was a history of contact in only 19 per cent and no history of contact in 81 per cent. By careful investigation of the same cases they obtained a definite history of contact in 56 per cent.

Intradermal Reactions. In performing these tests 0.1 c.c. of a 1:1000 solution of O. T. Tuberculin was injected intracutaneously. Both the Bovine and Human Types were used. Greater concentrations were not used. At the end of the observation periods twenty-two of twenty-eight cases tested had reacted positively to one or both types. Table II indicates the

Table II

Positive Human Tuberculin Reaction	Positive Bovine Tuberculin Reaction	Positive Reaction From Both H&B Tuberculins
20 or 71.4%	13 or 46.4%	11 or 39.2%

positive reactions to the types of tuberculin used. The specific organism in tuberculous meningitis is, in the vast majority of instances, of the human type. In only two cases was the bovine tuberculin reaction positive when the human type was negative. Herben and Asserson state that in forty-seven specimens of cerebrospinal fluid showing tubercle bacilli, in only three instances were they bovine in type. In Sisson's[5] twelve cases, eight gave positive reactions and four were negative. He explains that such cases of tuberculous meningitis giving a negative intradermal reaction may be due to an overwhelming infection preventing the reaction from becoming positive or the child's resistance may be so reduced by the chronic process elsewhere in the body that they lack the fight, so to speak, to produce a reaction to tuberculin.

Duration of Disease. The average time existing between the onset of symptoms and death was 21.8 days. The shortest time was 6 days and the longest 55 days. In the Peterman and Kahn series the shortest period was 8 days and the longest 4½ months. Their largest number of cases died in the third week. Sisson[5] reports a case lasting only 5 days.

Other Foci. It is almost generally conceded that tuberculous meningitis is never primary but this fact is often hard to demonstrate even at necropsy. There was evidence of tubercular infection in parts of the body other than the central nervous system in 42.4 per cent of this series. Twenty-one per cent had miliary tuberculosis and the same percentage had tuberculosis of the tracheobronchial or hila glands. Four had pulmonary involvement resembling the adult type of infection and 5 had tuberculous perintonitis or enteritis. One had a tubercular infection of the hip and developed tuberculous meningitis while receiving hospital treatment for this condition. There was no clinical evidence at any time of pulmonary, glandular or miliary infection in this patient. Another patient had a chronic otitis media but repeated attempts failed to demonstrate the tubercle bacillus in the purulent discharge.

In this review it was interesting to note that in three of the four patients who complained of abdominal pain and on whom autopsies were done, tuberculosis of the abdominal viscera was found.

History. In obtaining the histories, the presenting symptoms were of a nature as to lead the way for diagnosis of cerebral involvement of some sort. It is easy for the physician to underestimate the importance of vague neurological symptoms, regarding them simply as manifestations of the child's unstable nervous system to some sort of minor ailment. The chief complaints on admission were vomiting, persistent headache, stupor, restlessness and irritability, in the order of their frequency. One complained of neck pain, another of diarrhoea, while two complained of spastic arms and legs. One complained of fever only and another of a spastic jaw followed by clonic convulsions. Only one had a chief complaint of anorexia. The average length of the prodromal stage, that is, from the onset of the first symptoms until the more severe symptoms such as convulsions and coma, were manifest, was 11.9 days. The longest prodromal stage was 45 days and the shortest 6 days. Eight were admitted in coma.

Temperature. The temperature ranged from 99.3 to 108. In twenty-three cases there was a definite antemortem elevation.

Nervous System. The information obtained from a thorough examination of the deep and superficial reflexes aids material in making an early diagnosis for it is usually positive findings of the nature which justify a spinal puncture. Of course the great deviation of the reflexes depends on the stage of the disease.

TABLE III

OTHER SIGNS AND SYMPTOMS

Headache (over 2 yrs. age)	Vomiting	Anorexia	Constipation	Diarrhoea	Temperature				Coma on Admission	Abdominal Pain	Facial Weakness	Tubercles on Choroid
					Average High	Average Low	Average Terminal	Highest Recorded				
42.4%	66.6%	66.6%	48.4%	Noted in One	104.6°F	99.3°F	104.6°F	108. °F	24.2%	22.2%	9.0%	6.6%

The following reactions were recorded at the time of admission to the hospital:

Patellar Reflex—Exaggerated	16
Neck { Stiff	28
Neck { Normal	5
Kernig's sign { Positive	20
Kernig's sign { Negative	13
Strabismus	13
Nystagmus	5
Brudzinski's sign { Positive	22
Brudzinski's sign { Negative	2
Babinski's sign { Positive	16
Babinski's sign { Negative	5
Pupillary Signs	
Normal in reaction, size and shape	3
Reaction sluggish	6
Immobile	17
Irregular	2
Unequal	8

In reviewing the literature it seems to be the consensus of opinion that any alteration of the contour and reaction of the pupils is one of the most important signs which enables one to make an early diagnosis.

LEUCOCYTES. The leucocyte count ranged from 6.400 to 27.250. The average was 18.300. The average percentage of lymphocytes was 28.3.

CEREBROSPINAL FLUID

Character. Twenty-six of the spinal fluids were found to be clear, four hazy, two turbid and one xanthochromic. One of the patients from whom a turbid fluid was obtained had, a few days previously, undergone a mastoidectomy and a culture from the mastoid cells yielded a growth of hemolytic streptococci.

Pressure. The pressure was definitely increased in twenty-nine cases.

Globulin. Globulin was present in all cases in a variable degree. It is of interest to note at this point that the meningism of pneumonia, intestinal intoxication and many other acute processes may also increase the protein content of the fluid. In such cases the cell count is not markedly increased. This is important from the standpoint of differential diagnosis.

Sugar. Benedict's solution was not reduced in 8 of 15 fluids tested for sugar. Stewart[7] states that in his series the majority of cases had a lowered sugar content. In a few cases it was increased and in one instance there were 125 mgms. per 100 c.c.

TABLE IV

NEUROLOGICAL FINDINGS

Neck Rigidity	Opisthotonos	Exaggerated Peripheral Reflexes	Kernig's Sign	Babinski's Sign	Brudzinski's Sign	Spastieity	Paralysis		Eye						Slowed Respiration	Slowed Pulse	Cheyne-Stokes Respiration	Convulsions					
							Extremities	Deglutition	Nystagmus	Strabismus	Ptosis	Anesthesia of Cornea	Pupils					Twitching	Local	General	Tonic	Clonic	Terminal
													Dilated	Alteration in Light Reflex									
28 or 84.8 %	15 or 45.4 %	16 or 48.4 %	20 or 60.6 %	16 of 31 or 51.6 %	22 of 24 or 91.6 %	16 or 48.4 %	3	11	5 or 15.1 %	13 or 39.3 %	2 Both Bilat	Noted in one case	17 or 51.2 %	23 or 69.6 %	8 or 24.2 %	8 or 24.2 %	17 or 51.2 %	3	5	16	11	5	3
							42.4%											23 or 69.7%					

Colloidal Gold was entirely negative in four fluids tested.

Cystology. The cell count ranged from 34 to 820 per cubic millimeter, the average being 179. The majority of the fluids contained a predominance of lymphocytes which averaged 69 per cent. In two of the cases from whom a clear fluid was obtained, the polymorphonuclear cells predominated. In one of these cases the duration of the symptoms was 9 days and in the other 7 days.

Bacteriology. All cultures on ordinary media were negative with the exception of two cloudy fluids, which yielded growths of staphylococcus aureus and streptococcus hemolyticus, respectively.

Tubercle bacilli were demonstrated in fifteen of twenty-three cases (65.2 per cent) by direct staining of the cerebrospinal fluids. Positive findings were obtained in 3 of 5 fluids on subsequent examinations which were previously negative. In the majority of cases the organisms were found enmeshed in the fibrin webs. The pellicles were transferred under water onto a glass slide by means of a wire loop. Positive findings were demonstrated in a few cases by staining the sediment after centrifuging the fluid for at least one hour, and one positive result by means of the alcohol precipitation method. Hemingway[8] in studying 138 cases found the organism in 135.

Fifteen of the fluids in question were injected intraperitoneally into guinea pigs and the specific organism was recovered in thirteen (86.6 per cent). The average pig's life after injection was eight weeks, the longest being ninety days and the shortest forty-four days.

Film Formation. A fibrin coagulum was formed in nineteen of twenty cases (95 per cent). Its time of formation ranged from two hours to twenty-four hours; the average was fourteen hours. Peterman and Kahn found webs in thirty-two of forty-seven cases. The web is often extremely difficult to see. Careful searching in different casts of light will often be successful when the pellicle had been previously overlooked. The fluid should be allowed to stand undisturbed if a web is expected to form.

Summary

1. The diagnosis of tuberculous meningitis is difficult without a thorough examination of the cerebrospinal fluid.
2. The earlier manifestations are variable but there are always present signs and symptoms referable to the central nervous system.
3. A history of contact can be obtained in over 42 per cent of the cases.
4. The intradermal reactions are not always positive.
5. In the vast majority of instances the human type of tubercle bacillus is the offender.
6. The disease has a remarkable predilection for young children and infants.
7. The cerebrospinal fluid is characteristic but may be altered by superimposed infections such as from otitis media.
8. The specific organism can be demonstrated in the cerebrospinal fluid in the majority of cases.
9. Guinea pig injection cannot be entirely relied upon to establish a diagnosis.
10. If a cerebrospinal fluid is allowed to stand undisturbed a pellicle will form in 95 per cent of the cases.

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19 *West Boscawen Street.*

GENITO-URINARY TRACT AND RECTAL PROBLEMS AS A PART OF GYNECOLOGY.*

GILBERT F. DOUGLAS, M. D., Birmingham, Ala.

In considering a subject such as suggested by the title of this paper, we should define the word gynecology, which is as follows:

"That branch of medicine which treats of women's constitution and diseases, especially of the genital, urinary, and rectal diseases occurring in women"—Dorland.

The nerves which supply the cutaneous margin of the rectum originate in the sacral plexus and have to do with the motor and sensory functions. Those which supply the region above this margin are derived entirely from the sympathetic nervous system. Due to this fact, there are no intrinsic means of early de-

*Read before the Calhoun County Medical Society, at Anniston, Ala., February 9, 1932.

tection of malignant, or other lesions involving the rectum and sigmoid. Until a growth has progressed far enough to involve the extrarectal structures, and to produce pelvic pain, or discomfort about the back, hips, etc., or abdominal pain and tenesmus due to obstruction, pain is not manifest; this appears late in rectal diseases.

Above the pectinate line (that is the junction of skin and mucous membrane), the lymphatics pass upward under the rectal mucosa to the sacral and hypogastric nodes. Below the pectinate line, the drainage is through the lymphatic channels which pass over the perineum and into the inguinal nodes. Anal fissure, infected hemorrhoids, rectal abscesses, etc., often cause inguinal adenitis.

The intestinal glands stop at the "ligne anorectal."

Buie states the records of the Mayo Clinic show that 3.4 per cent of all patients who register have hemorrhoids and that almost 8 per cent have symptoms referable to some proctologic disorder. Of those patients who have complaint referable to the bowel, 48.8 per cent have hemorrhoids.

I mention the frequency so that, on all gynecological examinations, this condition will not be overlooked, and so that such troubles when found may be corrected. The average age for females who have hemorrhoids is 45 1/10 years.

A bleeding from the rectum should always be diagnosed, ascertaining whether it is fissure, hemorrhoids, carcinoma or other foci of infection, in time to remedy same, rather than to treat palliatively for uterine, ovarian or tubal disease without an examination. Many patients give very inaccurate and misleading histories as to their illness, so that we are dependent on examination before drawing a final conclusion.

Hemorrhoidal disease microscopically is essentially a degenerative disease of the vein.

On considering diseases of the urinary tract, first we take up the urethra. We have gonorrhea, urethritis of non-specific origin, the urethral caruncle, and other infections. Stricture of the female urethra is much more commonly present than is recognized. A practical way of diagnosing this is to catheterize the patient before bi-manual examination, which will determine whether you can pass a medium size catheter without any great amount of pain or difficulty.

Cystitis is a very common finding in women who present themselves, thinking they have some uterine disorder. This is a most annoying and "nerve-racking" malady. For a cure many months treatment may be necessary. The patient should be told in the beginning of treatment that much time will be required to effect a cure; otherwise, she will stop before she has recovered. Long periods of a chronic cystitis will cause trabeculae to form and contraction of the bladder, causing the bladder capacity to be greatly reduced.

The female ureters are subjected to many infections, causing stricture which, if not relieved, will produce dilatation of ureter, and oftentimes permanent damage to the kidneys.

Another of the common problems in the treatment of women is pyelitis, also hydronephrosis, etc. These conditions are no doubt very potent causes of many of the other urinary infections. In many instances bacteria pass through the blood stream and become lodged in the kidney, later causing pyelitis and other urinary infections.

In the practice of gynecology, it is quite necessary to be either equipped to do, or to have a working basis with someone who does cystoscopic work, for this is a great help in the diagnosis and treatment of urinary tract infections.

There have been all too many appendices, tubes, ovaries, and even uteri removed, when a urinary infection was the seat of all of the patient's symptoms and trouble. This condition is not recognized as a result of ignorance on the part of the profession, but for the reason that we don't take time to investigate, or possibly turn the patient over to a urologist, who studies the symptoms from an entirely different viewpoint.

All Symptoms and Systems referable to the pelvic organs should be studied, and corroborated, if we hope to arrive at a correct diagnosis.

Infections from the rectum often travel through the lymphatics to the lymph nodes within the pelvis, and cause pain which is attributed to the uterus, tubes, or ovaries, simulating infection of the cervix, etc.

To do a rectal examination is easy if we will "school ourselves" into the habit of placing the patient in an abdominal position with head lowered, using a Hirschman's or other anoscope. Sigmoidscopic examination can be done in the office when indicated, but for most cases

a careful rectal examination with anoscope or proctoscope will eliminate nearly all of the "gynecological stumbling blocks," which are referable to this source.

To develop cystoscopic work is of very great value in the practice of gynecology, for there are many cases in which you can treat and effect a cure of all symptoms, if the urinary pathology is treated at the time the other symptoms are being treated. These cases would never be cured if this phase of their gynecological pathology is over-looked and goes untreated.

As operative surgery seems more spectacular, we are prone to jump at conclusions and operate before properly diagnosing our patients. To diagnose and treat sanely, many needless operations would not be done. When such operations have been done, it leaves the patient in a worse condition and the profession humiliated and made the poorer. For certainly we are "our brother's keeper," professionally as otherwise.

We should have the patient void just prior to getting on the table, or preferably catheterize her while on the table, as this will procure a non-contaminated specimen for microscopical examination. An empty bladder on examination is always necessary for accuracy in pelvic diagnosis.

After the bimanual, a rectal examination should be done. With one finger we can determine most of the gynecological troubles which are low down within the rectum.

A microscopical examination of a catheterized specimen of urine should be made where there is a question of an infection of the urinary tract, so as to eliminate this from the picture, for frequently this will clear the diagnosis.

As above stated, cystitis is one of the very frequent causes of pelvic discomfort, so much so, I think we might discuss a few of the fundamentals in its treatment. These patients, as a rule, are quite nervous, especially if their trouble has gone on for a long time, necessitating them getting up frequently at night to void, which interferes with their rest. This should be looked after and overcome.

So often when a patient comes in for examination and we have made a diagnosis of chronic cystitis, a prescription for a bladder sedative is given with the injunction that they take it with water and return within a few days if not better. What happens is this: they feel improved and then disappear for weeks or months to return later with a similar complaint, after which the condition has become more aggravated and more chronic.

I feel that when, on a gynecological examination, we find a chronic cystitis, we should at once explain to the patient what she has, and outline immediate treatment, explaining that it will take from six weeks to three or more months for her to get well with our using bladder irrigation and other forms of treatments as frequent as at least three times a week for a while. This should be in addition to the treatment which she is carrying out at home. If we will explain to the patient the necessity for and danger of not having this done, she will often get well; otherwise, she may never recover. Of course, if there is a stricture of the ureter or pyelitis present, this should be cared for at the same time.

Lots of patience and tact are required with many of these patients to keep them coming long enough to effect a cure, so I think it best to tell them in the beginning, so they will appreciate the time required for her to take treatment.

I have a patient now who came to me nearly three months ago with a proctitis and cystitis, who has received treatment elsewhere at intervals for the cystitis for eight or ten years, but never stayed long enough to be cured. She has been very patient and now seems much better. I mention this case as one of many that we all see, who can be benefited and cured if we will be patient with them and they with us.

With the many fascinating genital conditions we have to deal with, such as cervicitis, carcinoma of cervix and fundus, salpingitis, ovarian trouble, and—one of those which we are now on the lookout for more than ever before—*Endometriosis*, we are prone to not recognize the actual pathology while in search for the more remote conditions.

There is a surgical side to these conditions which should not be over-looked or under-estimated.

Many cases of chronic cystitis can be relieved to a certain degree by medicinal treatment, bladder irrigation, and topical applications, but where they are associated with a marked cystocele which, as a rule, is secondary to prolapsus uteri, which in turn is caused by a second degree laceration of the perineum, we cannot hope to effect a cure until we have oper-

ated, doing a perineorrhaphy and an anterior colpotomy,—overcoming the mechanical handicaps present. Marked cystocele will cause a residual urine to remain the greater part of the time, and harbor a "breeding ground" for bacteria in the bladder.

When a stricture of the ureter is present, we can only expect pain and discomfort to remain until proper dilatation by cystoscopy has been done, to assure proper drainage for the infection above, the infection certainly playing the greater role.

In view of the many cases of urinary discomforts in women due to ptosis of the kidneys, kinks and angulations of the ureters, I feel a pyelogram should be done where there are urinary symptoms which are not otherwise clearly diagnosed.

To treat an infected bladder, where there is a stricture, dilatation or angulation of the ureter, or a marked pyelitis, hydronephrosis or pus in the kidney above, we can accomplish but little unless these conditions are corrected, for, as a parody, "we are trying to clear the stream by dipping the muddy water out of the branch below while the *old sow* is wallowing in the spring above." Certainly the sensible thing is to remove the cause, and other symptoms will be more easily relieved.

The same rule will hold true largely in rectal diseases, complicated with other pelvic troubles, for, unless hemorrhoids, fissure, and other foci of infection are removed, the patient will have trouble after the genital tract shall have been cured.

Conclusions

1. The nerve supply of the cutaneous margins of the rectum are derived from the sacral plexus. Those supplying areas above this region come entirely from the sympathetic nervous system.

2. Where urinary symptoms are present, a careful diagnosis should be made to eliminate urethritis, cystitis, stricture, dilatation, angulation, etc., of ureter, and pyelitis.

3. Chronic cystitis is a very frequent disease, requiring much time for treatment. This should be explained to the patient in the beginning, in order that she will stay for treatment long enough to be cured.

4. Many gynecological operations are done which would be eliminated if we were more careful in making our diagnosis with special reference to the urinary tract and rectum.

5. Cystoscopic and proctoscopic examinations are quite essential in the practice of gynecology, and for correct gynecological diagnosis.

6. Examination of the rectum and urinary tract in women is necessary to complete a gynecological diagnosis.

1111 *South 20th Streets* (*Five Points*).

Correspondence

The New Library Building of the Medical College of Virginia.

To Virginia Physicians:

At the beginning of this school year, the library of the Medical College of Virginia was moved into the new building which had been under construction for nearly a year. This new library building supplies the library with its first adequate and suitable home.

The building is situated on historic ground, being across the street from, and to the north of, the White House of the Confederacy; across the street from, and to the east of, the home of Alexander H. Stevenson; and diagonally across the street from, and to the northeast of, the home of Maury, the oceanographer of the Confederacy.

The building was built simultaneously with and connected with the home of the Richmond Academy of Medicine so that the two buildings, though owned separately, actually form one building and function as such. This is a very happy combination in which the college library serves as the practical working library while the academy part, with its club rooms and its priceless Miller collection of old books and silhouettes, serves the historical and social side of medicine.

To make the picture complete, the Medical Society of Virginia has its offices and headquarters in the same building so that with the college, the city and the State all together, it might be called the medical center of Virginia.

We invite the physicians of Virginia to use the library. We have not only books and periodicals on medicine, dentistry, pharmacy and nursing but also on the related sciences such as physics, chemistry, and biology; anatomy, physiology and bacteriology. The professional man in any of the health fields will

find, in most cases, that the library can supply all his needs. If he wishes to look up the latest contributions on any subject he will find all the necessary indexes and files of more than five hundred periodicals. If he wishes to do more extended study he may have a private room set aside for his exclusive use. If he is interested in Virginiana he will find many old books bearing the signatures of some of Virginia's most famous physicians. Those who cannot come to the library we shall be glad to serve through the mails.

We invite you also to help the library to grow. Scattered over Virginia are many old books, portraits and instruments of medical significance that will grow in interest with the years. We trust that, more and more, these treasures will be deposited with us where they will be safe from the great destroyers, fire and neglect.

E. C. L. Miller,
Directing Librarian.

Woman's Auxiliary, to the Medical Society of Va.

President—Mrs. William Lett Harris, 1112 Matoaka St., Norfolk.
President-Elect—Mrs. Joseph Bear, 3012 Monument Ave, Richmond.
Recording Secretary—Mrs. Fletcher J. Wright, 49 S. Market St., Petersburg.
Corresponding Secretary—Mrs. Charles A. Saunders, 1000 Gates Ave., Norfolk.
Treasurer—Mrs. Reuben F. Simms, 2034 Park Ave, Richmond.

Committee Chairmen of the State Auxiliary.

The following Committee Chairmen were appointed by the President, Mrs. William Lett Harris, to serve for the ensuing year:

Organization—Mrs. Joseph Bear, Richmond.
Assistants—Mrs. Lee E. Sutton, Jr., Richmond; Mrs. Meade Edmunds, Petersburg; Mrs. M. N. King, Norfolk; Mrs. T. Elmore Jones, Portsmouth; Mrs. F. W. Upshur, Richmond.
Program and Health—Mrs Southgate Leigh, Norfolk.
Finance—Mrs. J. K. Hall, Richmond.
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Printing—Mrs. H. R. Drewry, Norfolk.
Convention—Mrs. Chas Rudasill, Richmond.
Courtesy—Mrs. C. J. Andrews, Norfolk.
Resolutions—Mrs. N. T. Ennett, Richmond.
Historian—Mrs. J. Allison Hodges, Richmond.
Parliamentarian—Mrs. M. N. King, Norfolk.

As expressing the interest of the Medical Society of Virginia in the Woman's Auxiliary, the President, Dr. J. C. Flippin, has appointed the following as an Advisory Board to the Woman's Auxiliary: Chairman, Dr. J. Allison Hodges, Richmond; Dr. Southgate Leigh, Norfolk; Dr. Lee E. Sutton, Richmond.

News From Local Auxiliaries.

Auxiliary to the Norfolk County Medical Society

The Executive Board met at 10:30 o'clock on December 2nd, and the regular Auxiliary meeting was at 11:30. Mrs. Wm. Lett Harris brought greetings as the State President. Mrs. C. A. Saunders made a very interesting report of the meeting of the State Auxiliary in Richmond. Mrs. M. N. King told of social activities incident to the State meeting.

It was decided that the new filing system advocated by the National Auxiliary be adopted the first of the year. A Committee was appointed to endeavor to get a number of health education movies to be shown at the local movie theatres on Saturday mornings.

In place of the usual card party that the Auxiliary gives annually, it was decided to ask each member for $2.00, the price of a ticket for herself and her husband, and this money will be used in charitable work.

Auxiliary to Richmond Academy of Medicine

On Friday, November 25th, the Woman's Auxiliary of the Richmond Academy of Medicine gave a dinner in the new home of the Academy for fifty five-point children and a number of adults. These children had been selected as the most representative of their local communities from a wide area of the State.

The members of the Auxiliary responsible for this interesting occasion were Mrs. J. O. Fitzgerald, Chairman, Mrs. E. Latane Flanagan, co-chairman. Committee on Arrangements: Mrs. L. C. Pusch, Mrs. J. Arthur Gallant, Mrs. John S. Weitzel, Mrs. F. W. Shaw and Mrs. Sue Harwood. Ten other members of the Auxiliary assisted in preparing and serving the dinner.

An interesting feature of the meeting of this Auxiliary on December 16th was two papers,

one by Mrs. Fred J. Wampler on "The Life and Work of Osler," and another by Mrs. Richard A. Bowen on "The Life and Work of Banting." At the same time Mrs. J. B. Stone reported on the recent meeting of the Woman's Auxiliary of the Southern Medical Association at Birmingham. Her presentation was most stimulating.

Tribute to Mrs. Freeman by the National President.

In accordance with the constitution of the Woman's Auxiliary of the American Medical Association, Mrs. James F. Percy, of Los Angeles, Calif., has become president of the Auxiliary, following the recent lamented death of Mrs. Walter Jackson Freeman, who was the able and beloved national president elected for the current year. Mrs. Percy has written the appreciation of Mrs. Freeman as follows:

"With feelings of deepest regret, the Woman's Auxiliary must record the passing of its National President, Mrs. Walter Jackson Freeman, at Philadelphia on October 27, 1932.

"Reared and developed in the environment of the highest standard of scientific medicine, her knowledge and sympathy together with her life-long experience, gave her an intimate understanding of many problems which otherwise might have seemed insurmountable.

"It has been a tribute to her that for so many years deep responsibilities have been entrusted to her vision, ability and wisdom, until finally the highest honors in the power of the Auxiliary members to give, had been bestowed upon her.

"Vivacious, energetic, a potent force wherever she applied her talents, she gave unselfishly to the last degree in her plans for the advancement and welfare of our organization.

"Life, in its strange and mysterious way of deciding for us when the day's work is done, brought to her the glad tidings of peace and rest, leaving to other hands the task of picking up the ends left loose by her trip to the Middle Western States and her fatal illness which immediately followed. To that end we shall, I know, all dedicate ourselves that the close of this fiscal year shall find as far as is in our power, the ideals and structure which she endeavored to build, consummated.

"Through sorrow our hearts will be newly welded together. Our efforts will be strengthened with a finer unity of purpose to which each, we ask, shall pledge herself in memory of the one who is gone.

"To my tasks, as her successor, I willingly devote myself and my best efforts, knowing the spirit of the Auxiliary and that the same loyal support and cooperation of the past will be vouchsafed to those officers whom she left to carry on.

"'Death did not delay her capture,
Sickness loosed her thong;
Out of the pain a rapture,
Out of the dark a song.'"

Auxiliary to the Southern Medical Association.

At the meeting of the Auxiliary to the Southern Medical Association, held in Birmingham, November 16th-17th, Mrs. Southgate Leigh, of Norfolk, Va., was made President-elect. Mrs. A. A. Herold, Shreveport, La., was installed as President, Mrs. C. E. Oates, Little Rock, Ark., retiring. Four Past-Presidents were in attendance: Mrs. E. H. Cary (wife of the President of the A. M. A.), Dallas, Texas, Mrs. Arthur McCormack, Louisville, Ky.; Mrs. C. W. Garrison, Little Rock, Ark., and Mrs. Jas. Newton Brawner, Atlanta, Ga. Two Past-Presidents of the Auxiliary to the A. M. A. were also present, as well as several members of the National Board. Two hundred and forty-six members were registered.

The Southern Auxiliary is composed of fourteen Southern States. Its project is "Research into the History of the Heroes of Early Medicine." There is a wealth of information yet uncovered on this subject.

The next convention will be held in Richmond, Va.

Truth About Medicine

In addition to the articles enumerated in our letter of October 29th, the following have been accepted:

Lakeside Laboratories, Inc.
- Ampoules Dextrose (d-Glucose) 25 Gm., 50 c.c.

Lederle Laboratories, Inc.
- Neocinchophen—Lederle
  - Tablets Neocinchophen—Lederle, 5 grains

Mead Johnson & Company
- Mead's Viosterol in Halibut Liver Oil, 250 D.

H. A. Metz Laboratories, Inc.
- Tablets Novocain, 1 grain.
- Tablets Novocain 0.01 Gm with L-Suprarenin Synthetic Bitartrate 0.2 mg.
- Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 1 c.c.
- Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 3 c.c.
- Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 5 c.c.
- Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 50 mg.

Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 100 mg.
Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 120 mg.
Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 150 mg.
Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 200 mg.
Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 300 mg.
Ampules Sterile Solution Novocain 20 per cent, 5 c.c.
Ampules Sterile Solution Novocain 20 per cent, with L-Suprarenin Synthetic Bitartrate, 5 c.c.
Ampules Novocain Solution 1 per cent, 2 c.c.
Ampules Novocain Solution 1 per cent with L-Suprarenin Synthetic Bitartrate, 2 c.c.
Ampules Novocain Solution 1 per cent with L-Suprarenin Synthetic Bitartrate, 6 c.c.
Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 1 c.c.
Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 3 c c.
Novocain and L-Suprarenin Synthetic Bitartrate Hypodermic Tablets "K."
Ampules Ephedrine-Novocain Solution, 1 c.c.

Riedel-de Haen, Inc.

Nostal

Nostal Tablets, 0.1 Gm. (1½ grains).

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Liver Extract—Parke, Davis & Co.—A light brown granular powder representing a water-soluble fraction of mammalian liver, which contains the substance effective in the treatment of pernicious anemia. It is supplied in vials containing an amount of powdered extract (3 to 3 5 Gm.) obtained from 100 Gm. of fresh liver. Parke, Davis & Co., Detroit.

Liver Extract (Intramuscular)—Parke, Davis & Co.—A sterile aqueous solution, containing the nitrogeuous nonprotein fraction G of Cohn et al. obtained from fresh mammalian liver. Liver Extract (Intramuscular)—Parke, Davis & Co. is used in the treatment of pernicious anemia. It is supplied in the form of 2 c.c. glaseptic ampoules, each c.c. containing the active material obtained from 5 Gm. of liver. Parke, Davis & Co., Detroit.

Undulant Fever Bacterial Vaccine.—A heat killed suspension in physiologic solution of sodium chloride of Brucella melitensis (The Journal, February 6, 1932, p. 480), var. abortus (bovine type, 50 per cent; porcine type, 50 per cent), preserved with 0.5 per cent of phenol. Each cubic centimeter contains six billion killed organisms. The product is marketed in packages of six 2 c.c. vials. Jensen-Salsbery Laboratories, Inc., Kansas City, Mo. (Jour. A. M. A., October 8, 1932, p. 1262).

Biliposol.—A complex compound of high molecular weight, the chemical structure of which has not been established, combining bismuth and a-carboxethyl b-methyl nonoic acid. It contains about 45 per cent of bismuth. Biliposol is proposed as a means of obtaining the systemic effects of bismuth in the treatment of syphilis (see Bismuth Compounds, New and Non-official Remedies, 1932, p. 100). It is marketed in 2 c.c. ampoules. Ulmer Laboratories, Minneapolis. (Jour. A. M. A., October 22, 1932, p. 1424).

Gas Gangrene Antitoxin (Combined).—An anaerobic antitoxin (New and Non-official Remedies, 1932, p. 359), prepared by immunizing horses against the toxins of B. perfringens (B. welchii) and vibrion septique. The product is marketed in packages of one syringe containing 10,000 units of perfringens antitoxin and 10,000 units of vibrion septique antitoxin. Eli Lilly & Co., Indianapolis, Ind.

Tetanus-Gas-Gangrene Antitoxin (Combined).—An anaerobic antitoxin (New and Non-official Remedies, 1932, p. 359), prepared by immunizing horses against the toxins of B. tetani, B. perfringens (B. welchii), and vibrion septique. The product is marketed in packages of one syringe containing 1,500 units of tetanus antitoxin, 1,000 units of perfringens antitoxin and 1,000 units of vibrion septique antitoxin. Eli Lilly & Co., Indianapolis, Ind.

Tuberculin Intracutaneous for Mantoux Text.—This tuberculin-Koch preparatiou (New and Nonofficial Remedies, 1932, p. 376), is marketed in packages of one intradermal syringe (single test); in packages of two intradermal syringes (double test); in packages of one 1 c.c. ampule; in packages of two 1 c.c. ampules, in packages of one 5 c.c. ampule, and in packages of two 5 c.c. ampules. The National Drug Co., Philadelphia. (Jour. A. M. A., October 29, 1932, p. 1511).

Diphtheria Toxin Diluted for Schick Test.—A diphtheria immunity test (Schick Test) preparation (New and Nonofficial Remedies, 1932, p. 395) marketed in packages of one vial containing 1 c.c. of diluted diphtheria toxin, and in packages of one vial containing 10 c.c. of diluted diphtheria toxin. Parke, Davis & Co., Detroit.

Diphtheria Toxoid.—This diphtheria toxoid preparation (New and Nonofficial Remedies, 1932, p. 382) is also marketed in hospital packages of one vial containing 30 c.c. of diphtheria toxoid. Parke, Davis & Co., Detroit. (Jour. A. M. A., November 12, 1932, p. 1691.)

Ampoules Dextrose (d-Glucose) 25 Gm., 50 c.c.—Each ampule contains dextrose (d-glucose) (New and Nonofficial Remedies, 1932, p. 262) 25 Gm., in distilled water, to make 50 c.c. Lakeside Laboratories, Inc., Milwaukee, Wis.

Solution Liver Extract (Lederle) for Oral Use.—A hydroalcoholic solution of an active principle of liver extract (Cohn's fraction G); ten c.c. containing active material obtained from 100 Gm. of liver (1 fluidounce containing the active material obtained from 10½ ounces avoirdupois). Solution liver extract (Lederle) for oral use is used in the treatment of pernicious anemia. Lederle Labobratories, Inc., Pearl River, N. Y. (Jour. A. M. A., November 26, 1932, p 1863.)

PROPAGANDA FOR REFORM

Iodized Salt, and Goiter an Iodine Deficiency Disease.—Iodine, an essential chemical element for normal nutrition, may be insufficiently furnished by food and drink and cause simple goiter, an iodine deficiency disease. Although supplemental iodine supplied through salt or other special foods may prevent goiter that would otherwise occur or cure incipient cases, the simple administration of iodine in this manner is not a "cure-all." An "accepted" iodized salt shall contain one part of sodium or potassium iodide for each 5,000 parts of salt (approximately 150 parts of iodine per million parts of salt), or the iodine equivalent of any other suitable iodine compound. Iodized salt containing more than this quantity is considered a medicament not to be advertised to the public for table and cooking uses. (Jour. A. M. A., November 12, 1932, p. 1691.)

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Editorial

The Costs of Medical Care.

The medical profession of America should read and carefully consider the report of the Committee on the Costs of Medical Care, which recently has been made public in New York City before an assembly designated as the National Conference on the Costs of Medical Care. The medical profession in each state, county, and city, and the medical profession as individuals must weigh the evidence brought out by this committee and must decide between the two general plans: whether the recommendations of the report of the majority or of the minority shall be approved.

The need for a decision by the organized medical profession seems urgent because of the method of presenting the report to the public. The report of this committee is not made to the medical profession for its discussion, modification or adoption but is given publicity through the public press, and communities are urged to "attack the perplexing problem of providing adequate medical care for all persons at costs within their means."

Practitioners of medicine in Virginia have inherited long years of tradition in the matter of medical fees to individual patients, have borne a worthy part in serving the indigent, the poor, the "white-collar man," and the well-to-do: have served state, county and urban districts in public health and public clinic relations, and through the years, have considered first the welfare of the sick and the unfortunate. Practitioners know much, first-hand, of both economic and physical ills of the community in all classes. To no better jury than the medical profession of Virginia, it would seem, so far as the economic conditions of this section of country are concerned, should a matter of this sort be more appropriately submitted. Especially so when recommendations made involve radical changes in established practices in the remuneration for professional service. In the medical profession of no other state are ties of an established custom in such matters more firmly rooted.

It would seem, therefore, a brief statement of the work of the Committee should be made in the official publication of the Medical Society of Virginia, in order that each member may have early the recommendations of the Committee.

Conscious of an unsatisfactory condition, some fifteen leaders in the fields of medicine, public health, and social sciences came together for a conference in Washington, April of 1926. This unsatisfactory condition in America was described as the too great prevalence of diseases that should be under better control, if not blotted out. Unnecessary incidence of disease; complicating illnesses and deaths from cancer, heart disease, diabetes, syphilis and tuberculosis were evident in America; far too much focal infection existed in the people, far too much pathology was extant, and far too many crippling illnesses were current in the population of the country. It was felt that medical science had advanced to a point that all of these major disease problems could be

and should be more effectively mastered and that means more thoroughly applicable to the wider enjoyment of a higher percentage of well-being among all classes of American citizens from infancy to old age of both sexes should be sought.

It was recognized, at the same time, that vast and untold misery and pain and sickness had been lifted from the homes of the American people within the last third of a century through the more or less well ordered developments in private practice and in public health measures of the nation. It was known that tuberculosis was no longer "the Captain of the Men of Death," that typhoid fever, malaria, yellow fever, and like indigenous and perennial scourges no longer visited the homes of the American people as in years past. It was felt, however, that public health agencies should function better and that individual sickness of the American people should be more thoroughly and successfully combated and cured.

It was thought that this "unsatisfactory condition" arose through two general causes—first, the lack of a more logical and scientifically developed plan of public health organization and medical services in the nation and, second, through the excessive costs of medical care to the great bulk of the people.

This committee engaged the cooperation of certain Foundations to furnish the money ($1,000,000) in order to secure the service of a Research Staff, under a director, an executive secretary, and a field secretary, to conduct a study of this problem. A larger committee was then formed representing groups of leading workers in the private practice of medicine, in public health, in institutions and special interests, in social sciences and the public. This committee, through an executive committee, has operated under the supervision and direction of the general research staff. The final report of the five-year study, as noted below, was made at a public meeting in New York on the 30th of November last. As costs of medical care involve problems of most essential importance to medical practitioners, who form the body of professional and trained persons rendering medical service to the people of the nation, it becomes extremely necessary for doctors of medicine to take discriminating notice of the recommendations presented. Every doctor of the land should acquaint himself with the facts found by this study and should likewise inform himself as to the recommendations of the two groups—the so-called majority group report and the minority group report. The recommendations represent opinions formed by some persons not actually in the rank and file of the medical profession, by some in private practice, and by some in executive positions and in public health offices.

The personnel of the Committee was as follows:

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Significant Facts Revealed

Among the significant facts and figures revealed in the report are the following:

1. The nation's "medical dollar" (based on data for total medical bill of $3,656,000,000 for 1929) is distributed as follows:

Physicians in private practice	29.8c
Hospitals	23.4c
Dentists	12.2c
Medicines	18.2c
Public health	3.3c
Nurses	5.5c
Cultists	3.4c
All others	4.2c
	100.0c

2. A total of 1,084,500 persons in the United States are engaged in the provision of medical care and in the sale of medical commodities, as follows:

Personnel	*Private Practice*	*Medical Institutions or Sale of Commodities*
Physicians	121,000	21,000
Dentists	56,800	5,600
Graduate Nurses	118,000	77,000
Student Nurses		80,000
Public Health and Industrial Nurses		18,800
Practical Nurses	150,000	
Midwives	47,000	
Chiropodists	4,900	
Optometrists	20,200	
Osteopaths	7,700	
Chiropractors	16,000	
Naturopaths	2,500	
Religious Healers	10,000	
Pharmacists		132,000
Lay Personnel in Hospitals, Clinics and Public Health Agencies		196,000
Total	554,100	530,400
Grand Total		1,084,500

3. The place that medical care occupies in the nation's expenditures is shown by the following table:

Fuel, gas, ice, and electricity	2,573 millions
Personal adornment	2,698 millions
Tobacco, candy, ice creams, soft drinks	3,074 millions
Education	3,388 millions
Recreation	3,420 millions
Medical Care	3,577 millions
Household furnishings and supplies	4,594 millions
Automobiles	7,882 millions
Clothing	9,315 millions
Rent	13,060 millions
Food	16,137 millions

4. Most of the money spent directly by the people for medical care goes for the treatment of illness and a very small proportion for prevention, as follows:

78.5% for care of illness
17.4% for dental care
2.7% for eye care
1.4% on prevention

5. The following comparison is given between the number of deaths due to largely preventable causes, and the number of United States soldiers killed in battle or by wounds in the World War:

Killed by the World War	50,285
Killed by tuberculosis (1930)	88,088
Killed by cancer (1930)	119,818
Infant deaths (1930)	135,845

6. The per capita expenditure in the United States for medicines is $5,49. For public health work—local, state, and federal—it is only $1.00.

7. Practitoners' incomes are distributed very unevenly, and actual incomes are inadequate for a large number of practitioners, while they are more than adequate for some others. The extent of this maldistribution is suggested by the wide interval between the middle or median net income of $3,800 and the average of $5,300. In 1929, one-third of all private practitioners had net incomes of less than $2,500. For every physician with a professional net income of more than $10,000, there were two who received less than $2,500. The contrast is especially great between general practitioners and specialists. In 1929, the 70,000 general practitioners, as a group, received less income than the 30,000 complete specialists. The average net income of the former group was under $4,000, while that of the latter was over $10,000.

8. Costs to the individual receiving medical care were likewise found to be extremely uneven. A study of 9,000 families showed that average costs of medical care varied with the incomes of these families, but that within each

income group there were wide variations in the actual cost per family.

Of families with total annual incomes under $1,200, 80 per cent paid less than $60 during a year and 1 per cent paid over $500.

Of families with total annual incomes over $10,000, 0.7 per cent paid under $60 during a year and 74 per cent paid over $500.

Members of the Medical Society of Virginia may well study the following statement in the December 3, 1932, issue of the *Journal of the American Medical Associaiton:*

Final Report of Committee on the Costs of Medical Care

Five years of work by the fifty members and research staff of the Committee on the Costs of Medical Care have culminated in this final report, entitled "Medical Care for the American People." The majority report was favored by the following:

Private Practice—Lewellys F. Barker, M. D.; Walter P. Bowers, M. D.; J. Shelton Horsley, M. D.; Stewart R. Roberts, M. D.; Richard M. Smith, M. D.; Walter R. Steiner, M. D., and Rollin T. Woodyatt, M. D.

Institutions and Special Interests—W. Irving Clark, M. D.; William Darrach, M. D; Louis I. Dublin, Ph. D.; Elizabeth Fox, R. N.; Ambrose Hunsberger, Phar. M.; Alfred Owre, D. M. D., M. D;. W. S. Rankin, M. D.; Mary M. Roberts, R. N.; Alphonse M. Schwitalla, Ph. D., and Winford H. Smith, M. D.

Public Health—George H. Bigelow, M. D.; Herman N. Bundesen, M. D.; Haven Emerson, M. D.; John Sundwall, M. D., and C. E. A. Winslow, Dr. P. H.

Social Sciences—Michael M. Davis, Ph. D.; William T. Foster, Ph. D.; Wesley C. Mitchell, Ph. D.; William F. Ogburn, Ph. D., and Henry C. Taylor, Ph. D.

The Public—Winthrop W. Aldrich; Morris L. Cooke, D. Sc.; Mrs. William Kinnicutt Draper; Homer Folks, LL. D.; John P. Frey; Mrs. Walter McNab Miller; William J. Schieffelin, Ph. D.; Amelia Sears, and Ray Lyman Wilbur, M. D.

A summary of the majority report follows:

I

"The Committee recommends that medical service, both preventive and therapeutic, should be furnished largely by organized groups of physicians, dentists, nurses, pharmacists and other associated personnel. Such groups should be organized, preferably around a hospital, for rendering complete home, office and hospital care. The form of organization should encourage the maintenance of high standards and the development or preservation of a personal relation between patient and physician.

II

"The Committee recommends the extension of all basic public health services—whether provided by governmental or nongovernmental agencies—so that they will be available to the entire population according to its needs. This extension requires primarily increased financial support for official health departments and full-time trained health officers and members of their staffs whose tenure is dependent only on professional and administrative competence.

III

"The Committee recommends that the costs of medical care be placed on a group payment basis, through the use of insurance, through the use of taxation, or through the use of both these methods. This is not meant to preclude the continuation of medical service provided on an individual fee basis for those who prefer the present method. Cash benefits, i. e., compensation for wage-loss due to illness, if and when provided, should be separate and distinct from medical services.

IV

"The Committee recommends that the study, evaluation and coordination of medical service be considered important functions for every state and local community, that agencies be formed to exercise these functions, and that the coordination of rural with urban services receive special attention.

V

"The Committee makes the following recommendations in the field of professional education: (A) That the training of physicians give increasing emphasis to the teaching of health and the prevention of disease; that more effective efforts be made to provide trained health officers; that the social aspects of medical practice be given greater attention; that specialties be restricted to those specially qualified; and that postgraduate educational opportunities be increased; (B) that dental students be given a broader educational background; (C) that pharmaceutical education place more stress on the pharmacist's responsibilities and opportunities for public service; (D) that nursing education be thoroughly remolded to provide well educated and well qualified registered nurses; (E) that less thoroughly trained but competent nursing aides and attendants be provided; (F) that adequate training for nurse-midwives be provided, and (G) that opportunities be offered for the systematic training of hospital and clinic administrators."

The first chapter surveys "The Present Status of Medical Care." It reports that 177,000 physicians and dentists, with some 900,000 others at an annual expense of $3,647,000,000, so distribute their services that those in the lower income groups, while suffering as much or more sickness, receive far less medical service than those with a greater income.

There is a lack of preventive health care; indeed, "niggardly appropriations for public health work." The burden of sickness cannot be measured by averages, because of the extreme unevenness with which it is distributed. Fifty per cent of the families in the United States have incomes of less than $2,000, which means that "even less-than-average charges for medical service, therefore, are more than many of our families can bear."

One conclusion reads: *"Certainly no solution to the problems of medical costs can be reached through a reduction in the average of professional incomes"* (italics in original). This average is none too high now to attract a high type of practitioners and permit progress through graduate training and study.

The Committee attempts from the report of some of these investigations to calculate the cost of complete medical care and concludes that "all needed medical care of the kind which people customarily purchase individually could be provided in urban regions at least, at a cost, excluding capital charges, of $20 to $40 per capita per annum."

The second chapter discusses "The Essentials of a Satisfactory Medical Program." Six basic essentials are enumerated:

"1. The plan must safeguard the quality of medical service and preserve the essential personal relationship between patient and physician.

"2. It must provide for the future development of preventive and curative services in such kinds and amounts as will meet the needs of substantially

all the people and not merely their present effective demands.

"3. It must provide services on financial terms which the people can and will meet, without undue hardship, through either individual or collective resources.

"4. There should be a full application of existing knowledge to the prevention of disease, so that all medical practice will be permeated with the concept of prevention. The program must include, therefore, not only medical care of the individual and the family but also a well organized and adequately supported public health program [1]

"5. The basic plan should include provisions for assisting and guiding patients in the selection of competent practitioners and suitable facilities for medical care.

"6. Adequate and assured payment must be provided to the individuals and agencies which furnish the care."

Having set up these standards, the Majority Report selects three lines of approach to the solution of its problem:

"(a) The development of types of organized or group practice that will more effectively and economically meet the community's medical needs.

"(b) The distribution, over a period of time and over a group of families or individuals, of the costs of service.

"(c) Provision for the planning and coordination. on a local and regional basis, of all health and medical services."

It is evident that the program of the Majority Report centers around "provision of service through organized groups." The groups studied on which conclusions are based covered only fifty such groups; conclusions as to the financial operation of such clinics and especially as to their net and gross income are based on the information furnished by twenty-seven such clinics.

The Majority Report sets up "standards" for group practice and among these emphasizes the statement that "*lay groups organized for profit have no legitimate place in the provision of this vital public service*" (italics in original). This standard, the Committee seems to fail to note, would eliminate many of the examples of group practice on which it depends for the argument previously mentioned leading to the estimate of annual cost.

"Inevitably the Committee has been led to the conclusion that the costs of medical care should be distributed over groups of people and over periods of time." This leads to the adoption of insurance as a major recommendation. The participation of insurance companies is rejected and taxation accepted only in a secondary form. Having eliminated these, the Majority Report is brought to the somewhat indefinite conclusions that "there should, therefore, be an agency in each community through which the lay and the professional groups concerned in providing and financing medical services could consult, plan and act in behalf of the best provision of medical resources which the community can afford." The character of this "agency" remains indefinite throughout the report.

Chapter three sets up "An Ultimate Objective in the Organization of Medicine." "The keystone of the concept of a satisfactory medical service for the nation is the development of one or more non-profit 'community medical centers' in every city of approximately 15,000 population or more." Then follows a description of such an imaginary center. The Majority Report passes lightly over such questions as the possibility of the redistribution of great medical centers that have been established in most large cities for educational, political, financial or other purposes which render them ill adjusted to fit into such a program.

It assumes that existing hospital organizations can be so transformed but offers little information as to the methods by which this change may be brought about. There is much talk of "coordination and control of services" but there is no definite statement as to what is to constitute this important factor in the program.

Chapter four considers "Plans and Experiments Now Under Way" and lists twenty-five such experiments. Four of these are "under professional sponsorship"; four "under consumer sponsorship"; thirteen are listed as "under community sponsorship with professional participation"; one "under joint sponsorship of professional and consumer groups," and three "under commercial sponsorship." All of these are treated without the specific criticisms necessary to inspection of the foundation stones on which the structure of the national medical service is to be erected.

The Committee concludes that:

"These twenty-five types of development in the United States and the many developments abroad show a ferment at work in medical practice which contains great possibilities for good and evil. The Committee is aware of the fact that some of the plans are mere attempts to capitalize for private gain the people's needs for better medical service. It is equally aware of the dangers inherent in other plans. Each should be viewed as an experiment and subjected to the careful evaluation that is given in a scientific laboratory. Some of them appear to the Committee to be very promising."

The fifth chapter includes "The Recommendations of the Committee" previously here quoted. The somewhat vague character of the report is excused by the statement that "the committee believes that its obligations require it to think ahead for twenty or thirty years, as well as for the next five or ten years and to present distant as well as immediate goals."

The Committee's first recommendation that medical service "should be furnished largely by organized groups of physicians, dentists" and so on does not take account of the fact that these groups are already professionally organized in their own associations. Indeed, the existence of these professional associations is almost entirely ignored in the Majority Report.

"The Committee's most fundamental specific proposal is the development of suitable hospitals into comprehensive community medical centers."

Industrial medical service is cited as another step toward the realization of this recommendation, and the Majority Report suggests "that free choice of practitioners should be allowed insofar as practicable."

University medical service is also to be fitted into this scheme. "In 'College towns' it may frequently be feasible to expand the university medical service into a community medical center which serves townspeople as well as students."

The Majority Report recognizes the necessity of measures to maintain the quality of medical service in groups; no recommendations are made concerning relationships with professional associations, the most important bodies for maintaining standards.

The recommendation which will undoubtedly at-

[1]The term "public health program" is meant to include the work of the official health departments and of voluntary health agencies.

tract the most attention is that "the costs of medical care be placed on a group payment basis, through the use of insurance." The discussion is extremely indefinite. The comments interspersed clearly reflect sharp divisions of opinion in the Committee.

It is suggested that "a state medical society might initiate and standardize the organization of group practice in local areas and serve as a negotiating or mediating body in making the arrangements for group payment." On the whole, however, the Majority Report seems to incline to a voluntary insurance scheme with subsidies from taxation.

There is also the conclusion that making "individual practice and not group practice the logical foundation of the whole system . . . has been one of the chief disadvantages which European countries have faced under compulsory insurance." Examples or evidence in support of this conclusion are not made available.

The Majority Report persistently emphasizes the importance of groups; it looks on insurance "as the most effective possible stimulant to the formation of such groups." It is hard to determine whether the groups are to be the basis or the objective of the program.

Confronted with the problem of the "control of competition," which has hitherto evidently produced deterioration in most of the schemes of contract practice which are discussed, the Majority Report proposes the following devices for its control:

"(a) Provision of medical service in increasing proportions by organized non-profit groups with community backing and control.

"(b) State regulation of the finances to assure actuarial soundness.

"(c) The formulation of general standards and policies, the regulation of charges, and the arbitration of difficulties by the state medical and dental societies or by an officially appointed medical board nominated in large part by the societies."

The Majority Report urges a study by professional groups with lay participants as a preliminary to the installation of any program.

In the final chapter, "The Challenge of the Future," appears recognition of the place of such professional associations. The report says:

"The cooperation of the professional groups in community or state leadership is essential. Their stake in these issues is very large; their interest is continuing. They should instigate as well as guide. The crucial point in the generalship of the forces at work is, perhaps, the development of a proper relation between the professional and the lay groups. The public should recognize the central place of the professional groups in determining standards and methods. The professions should recognize their ultimate responsibilities to the public. The control of undesirable commercial enterprises in this field will depend largely on the watchfulness of the professional bodies, on their ability to enlist lay cooperation, and on the development of sound and successfully operating and non-commercial plans.

"Continued study of the complex problems of medical economics is of the first importance. The Committee's investigations have opened a way. Fortunately, professional societies are establishing bureaus and committees on medical economics. Because a university has the unique advantage of having both medical and social scientists in one organization, the Committee has formally recommended to the universities of the country that they conduct research in this field."

Minority Reports

Two minority reports and two statements, constitute the views of those members of the committee who found themselves in conflict with the general tone or trend of the majority report.

First Minority Report

The first minority report, which was signed by A. Christie, M. D.; George E. Follansbee, M. D., M. L. Harris, M. D., Kirby S. Howlett, M. D., A. C. Morgan, M. D., Olin West, M. D., Robert Wilson, M. D., and N. B. Van Etten, M. D., draws attention to the failure of the Committee to show by facts that "organization" can accomplish what is claimed for it in the majority report. There is nothing in the experience of the medical profession to show that the "Community Medical Center" is a workable scheme or that it would not contain evils of its own which might be worse than the evils it is supposed to alleviate. This Medical Center Plan is suggestive of the great mergers in industry in which mass production and centralized control are the principal features. It apparently disregards the fundamentals which make medicine a personal service and which require that the individual patient and not diseases or economic classes or groups be the object of medical care.

The objections to the Medical Center Plan are summarized as follows:

1. It would establish a medical hierarchy in every community to dictate who might practice medicine there.
2. It would be impossible to prevent competition among the many such centers necessary for large cities; cost would inevitably be increased by the organization necessary to assign patients to the various centers. This would add to the evils of medical dictatorship those of a new bureau in the local government with its attendant cost.
3. Continuous personal relationship of physician and patient would be difficult if not impossible under such conditions.

In the opinion of this minority group, the question of "Industrial Medical Service" has not been adequately or fairly dealt with in the majority report. For each of the favorable reports published (publications Nos. 5, 18 and 20) many instances could be cited wherein the results of industrial medical services have been exceedingly unfavorable. It is pointed out that in industrial medical services, mutual benefit associations, so-called health and hospital associations, and other forms of contract practice, no means have been found to prevent destructive competition between individuals or groups concerned with these movements. The studies published by the Committee show only the favorable aspects. They were selected because they were considered the most favorable examples of this type of practice in the United States. For each of these plans a score of the opposite kind can be found.

Utilization of subsidiary personnel is nothing new in medical practice. Already there is constant temptation in many fields to permit technicians to perform duties entirely unjustified by their knowledge and training. The minority expresses a word of caution relative to the dangers involved in permitting non-medical technicians to assume the duties which only physicians should undertake.

The Committee's first recommendation that medical service "should be furnished largely by organized groups of physicians, dentists" and so on, is apparently predicated on the Committee's study on "Private Group Clinics." This minority group believes that the establishment of such clinics is in line of

progress when they are a natural outgrowth of local conditions, but the studies published by the Committee, in the opinion of the minority, were far too few in number to constitute a safe base on which to erect so large and revolutionary a structure as is proposed. The majority report fails to consider the fact that multiplication of clinics or groups in large communities results in duplication of expensive equipment far beyond the needs of the community. Such a multiplication of medical facilities, instead of reducing overhead and the costs of medical care to the community, adds to this cost through the duplication of plants. It is significant to note that the overhead in private medical practice averages only about 2 per cent higher than for medical groups in the lower brackets of gross income. As the gross income rises, the ratio of overhead becomes progressively less significant.

Other disadvantages of group practice are restriction of freedom of action in respect to vacations, study, travel, attendance on scientific meetings and even publications of medical articles to all members except the heads of the group; comparatively static income of members of a group except that of the owner or owners; salary cuts, then discharge of employees to reduce overhead in times of depression; disruption of groups through death or disability of some able man or men around whom the group has been built, and the difficulty with which physicians are able to find employment in another group or are able to enter private practice when a group closes.

In spite of the extensive data available on the insurance systems of Europe and the evidence which can be produced to show that voluntary health insurance schemes have everywhere failed, the majority of the Committee makes the definite recommendation that this country adopt the thoroughly discredited method of voluntary insurance A system of voluntary health insurance tied to the visionary medical center plan, which is offered as the "keystone" of all medical service, would plunge the medical profession into similar or more difficult problems than have been experienced by the European profession in its struggle against the various European insurance schemes. In the United States, contract practice is essentially health insurance and has already given rise to destructive competition among professional groups, inferior medical service, loss of personal relationship of patient and physicians, and demoralization of the profession. It is clear that all such schemes are contrary to sound public policy and that the shortest road to commercialism of the practice of medicine is through the supposedly rosy path of insurance.

The objections to compulsory health insurance are almost as compelling to this minority group as are those to voluntary insurance. Proof of the evils of the compulsory system is at hand in our own experience in this country with the only compulsory system with which we have yet had to deal, workmen's compensation insurance. Under workmen's compensation, groups are soliciting contracts, often through paid lay promoters; laymen are organizing clinics and hiring doctors to do the work; standards of practice are being lowered; able physicians outside the groups are being pushed to the wall; the patient is forced by his employer to go to a certain clinic, and the physician is largely under the control of the insurance companies. These are not visionary fears of what may happen but a true picture of widespread evils attending insurance practice. No better example should be needed of what must happen to medical care if compulsory insurance is extended to families.

The total cost of medical care is unusually increased when it is paid for through insurance, because the cost of operation of the insurance plan must be added to the cost of medical care and the number of persons sick and the number of days' sickness per capita always increase under any insurance system. The Majority Report registers approval of insurance but disapproves of insurance companies. The minority group agrees with the principle that, in any contract practice plan involving an insurance principle, this principle should be applied through a nonprofit organization. The minority group has not attempted to marshal all the facts or arguments that can be used against health insurance, but has endeavored to show that there are great dangers and evils in insurance practice which must be set over against the advantages of distributing the costs of medical care by this method. The minority group believes that the majority report has minimized these dangers and evils.

The minority recommendations follow:

"I. The minority recommends that government competition in the practice of medicine be discontinued and that its activities be restricted (a) to the care of the indigent and of those patients with diseases which can be cared for only in governmental institutions; (b) to the promotion of public health; (c) to the support of the medical departments of the Army and Navy, Coast and Geodetic Survey, and other government services which cannot because of their nature or location be served by the general medical profession; and (d) to the care of veterans suffering from bona fide service-connected disabilities and diseases, except in the case of tuberculosis and nervous and mental diseases.

"II. The minority recommends that government care of the indigent be expanded with the ultimate object of relieving the medical profession of this burden.

"III. The minority joins with the Committee in recommending that the study, evaluation and coordination of medical service be considered important functions for every state and local community, that agencies be formed to exercise these functions, and that the coordination of rural with urban services receive special attention.

"IV. The minority recommends that united attempts be made to restore the general practitioner to the central place in medical practice.

"V. The minority recommends that the corporate practice of medicine, financed through intermediary agencies, be vigorously and persistently opposed as being economically wasteful, inimical to a continued and sustained high quality of medical care, or unfair exploitation of the medical profession.

"VI. The minority recommends that methods be given careful trial which can rightly be fitted into our present institutions and agencies without interfering with the fundamentals of medical practice.

"VII. The minority recommends the development by state or county medical societies of plans for medical care."

Safeguards in Distribution of Medical Costs

This minority group agrees that any plan for the distribution of medical costs must have the following safeguards:

1. It must be under the control of the medical profession. (A "Grievance Board" to settle disputes, having lay representation, is permissible and desirable.)

2. It must guarantee not only nominal but actual free choice of physician.
3. It must include all, or a large majority of, the members of the county medical society.
4. The funds must be administered on a nonprofit basis.
5. It should provide for direct payment by the patient of a certain minimum amount, the common fund providing only that portion beyond the patient's means.
6. It should make adequate provision for community care of the indigent.
7. It must be entirely separate from any plan providing for cash benefits.

County Society Plans for Medical Care

The minority group states its reasons for favoring thorough trial of the county society plan for furnishing complete medical care as follows:
1. It places responsibility for the medical care of the entire community on the organized physicians of the community.
2. It places medical care under the control of the organized profession instead of in the hands of lay corporations, insurance companies, and so on.
3. It places responsibility for the quality of service directly on the organized profession. It is in fact the only plan that guarantees quality of service and makes it the only basis of competition.
4. It removes the possibility of unethical competition because it includes all the physicians of the community and fixes a fee schedule.
5. Solicitation of patents, underbidding for contracts and other evils of the usual insurance plans are eliminated.
6. Freedom of choice of physician is assured and the essential personal relationship of physician and patient is thereby preserved.
7. It is the only plan that includes all classes, from the indigent to the wealthy.
8. It is adaptable to every locality, both urban and rural.
9. It provides for a minimum cost of administration by operating on a nonprofit basis.
10. It provides for payment, by every patient with income, of a certain minimum amount before the insurance is in operation. The minimum rises with the patient's income. This provision alone will operate to avoid many abuses in all other types of insurance practice
11. It provides for means of certification of disability separate from the attending physician.
12. Cash benefits do not form a part of the plan.

Second Minority Report

The second minority report, which was signed by Herbert E. Phillips, D. D. S., and C. E. Rudolph, D. D. S., is in agreement with the first minority report in strongly emphasizing the necessity of maintaining professional standards and the position of the general practitioner. This group agrees with the first minority group that the majority is unduly critical of the professions. The second minority group joins with the first in declaring the medical center plan of the majority a utopian concept involving many problems too visionary or problematic to justify inclusion in an authoritative report of this kind.

The second minority group believe that the method of payment for medical service need not interfere with the highest professional standard or the close personal relations between practitioner and patient. Furthermore, this group is of the opinion that the introduction of compulsory health insurance under professional control would eliminate the objectionable features. It is in accord with the first minority group on the development by state or county medical society of plans for medical care.

The statements of Edgar Sydenstricker and Walton H. Hamilton are largely criticisms of the methods used by the Committee. They are of the opinion that the preliminary studies and the recommendation do not deal adequately with the fundamental economic questions which the Committee was formed primarily to study and consider.

President's Message

Report of Committee on Costs of Medical Care Should be Considered.

The Final Report of the Committee on the Costs of Medical Care is receiving widespread publicity from the Press. Editorial comment from this source, as well as by the official publications of organized medicine, plainly indicates the importance attributed to this Report, both by the public and by the medical profession.

When the full text of the studies upon which the conclusions of the Committee have been based are available for analysis, the Report will receive consideration by our Special Committee on Public Relations—State and County. This Committee of the Society was established for the express purpose of initiating studies and recommending to the Society suggested policies in this particular field. It may be assumed, therefore, that the State Organization in Virginia will be fully alive to its duties and responsibilities and that these will be met in an orderly fashion and in the manner prescribed by the Society.

There is reason to believe that county and other local societies in association with local civic organizations will be asked in the near future for suggested plans by which certain recommendations of the Majority Report may be put in operation. It is, therefore, of prime importance that every member of the Medical Society of Virginia inform himself as fully as possible upon the facts and recommendations discussed in the Final Report. It is here sug-

gested that local societies secure sufficient copies of the Final Report for circulation among their members.

Few of us who have read a summary of the Majority Report have failed to be surprised and perhaps astounded at the sweeping character and far-reaching scope of its recommendations and possible implications. Unquestionably the Report challenges the existing order in medicine in that it has failed both from the viewpoint of the public and of medical practice to adapt itself to the economic and social demands of a changing civilization. To be sure this is not an unfamiliar indictment—finance, commerce, government, legal procedure and practically all present-day institutions are being similarly assailed from one quarter or another. Whether medicine is more conspicuously out of joint with the times than other institutions is a fair question. Granted that it is not the chief offender, this fact alone will not be satisfying to the expectations and demands of a public long accustomed to the attitude and service of a profession whose sole aim is the good of society. It is hardly conceivable that the best interest of the public will ever require an economic order ultimately inimical to the highest development of medical practice and medical science.

Experience in some other countries warrants the belief, however, that ill-advised changes forced by public opinion have brought real harm. In the present instance the public should, and doubtless will, look to the medical profession for enlightened leadership and sound advice in weighing the recommendations of the Committee on the Costs of Medical Care. Let us not sacrifice this extremely important strategic position. Hasty accusation of personal bias on the one hand or of bureaucratic methods on the other cannot be expected to react favorably upon a thinking public.

Whatever our first impressions may be, it would certainly seem the part of wisdom to study carefully the full Report of the Committee. The Report contains a mass of information bearing on the conclusions arrived at, not available elsewhere. Among the signers of the Majority Report are practitioners of medicine whose opinions at least deserve our thoughtful consideration. It is highly expedient that unity of thought and action should be attained—and let us sincerely hope that it can be—but it is absolutely essential that we be right.

J. C. Flippin, M. D., *President,*
Medical Society of Virginia.

Dr. Flippin has appointed the following Special Committees to serve for the year ending with our 1933 meeting:

Special Committees

Walter Reed Commission—Chairman, Dr. C. P. Jones; Dr. J. D. Clements, Dr. J. W. Hunter.

Maternal Welfare—Chairman, Dr. P. W. Miles; Dr. Greer Baughman, Dr. F. O. Plunkett, Dr. T. J. Williams, Dr. W. R. Payne.

History of Medicine in Virginia—Chairman, Dr. W. B. Blanton; Dr. B. R. Tucker, Dr. F. C. Rinker.

Child Welfare—Chairman, Dr. W. P. Jackson; Dr. T. H. Daniel, Dr. W. A. McGee, Dr. W. W. Wilkinson, Dr. C. E. Conrad, Dr. A. T. Finch.

Anesthetists and Laboratory Technicians—Chairman, Dr. L. C. Pusch; Dr. W. E. Bray, Dr. I. H. Goldman, Dr. H. H. Trout.

Department of Clinical Education—Chairman, Dr. R. D. Bates; Executive Secretary, Mr. George W. Eutsler; Dr. W. F. Draper, Dr. R. A. Moore, Dr. H. S. Daniel, Dr. L. T. Royster, Dr. Manfred Call, and Advisory Board, composed of Committee on Scientific Work and Clinics and Committee on Medical Education and Hospitals.

Group Societies—Chairman, Dr. W. B. McIlwaine, Dr. D. M. Kipps, Dr. E. L. Kendig.

Public Relations—State and County—Chairman, Dr. A. F. Robertson; Dr. M. B. Hiden, Dr. Herbert C. Jones, Dr. J. Shelton Horsley, Dr. W. B. Martin, Dr. I. C. Harrison.

Military Affairs and National Defense—Chairman, Dr. H. F. White, Dr. B. S. Yancey, Dr. Bernard Kyle.

Tuberculosis Clinics—Chairman, Dr. Dean B. Cole; Dr. H. A. Latane, Dr. S. E. Hughes, Dr. W. E. Brown, Dr. M. B. Jarman.

Mental Hygiene—Chairman, Dr. F. H. Redwood; Dr. J. H. Royster, Dr. D. C. Wilson, Dr. James P. King.

Advisory Board to Woman's Auxiliary—Chairman, Dr. J. Allison Hodges; Dr. Southgate Leigh, Dr. Lee E. Sutton.

To Make Inquiry as to Effect of Using Iodized Salt—Chairman, Dr. W. H. Higgins; Dr. N. G. Wilson, Dr. H. B. Mulholland.

To Administer Trust Fund for Post-Graduate Clinical Education—Last five living past presidents—Dr. J. Shelton Horsley, Dr. J. W. Preston, Dr. J. Bolling Jones, Dr. J. Allison Hodges, Dr. I. C. Harrison.

The New Year is here. We hope it may be a full twelve months of happiness, health and good luck for all.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Notice to the Component Societies.

The Department of Clinical Education will be glad to arrange for speakers to make addresses to any Society or group of doctors, on any subject desired. A list of attractive speakers is available, and requests for speakers or any information relative to them may be made to Mr. Geo. W. Eutsler, Secretary of Department, Box 1487, University, Va., or to the Chairman. We earnestly desire to cooperate with the Virginia doctors in carrying on this great work.

The success of the courses in Prenatal and Postnatal Care, given by Dr. Lapham, has encouraged us to feel that this work is going to be popular, and we believe it is going to be worthwhile to say that one has had the advantage of these courses.

In line with this effort to give post-graduate instruction, it may be well to consider the changes contemplated in some quarters, as to the methods of Medical Practice. I would call your attention to the Majority report of the committee on the Costs of Medical Care in the *Journal of the American Medical Association* for December 3, 1932, also the Minority report, and the very able comment by the Editor of that Journal.

I believe the time has come for the Medical Profession to wake up and get busy, unless it views with complacency the upsetting of the old order of medical practice, and the substitution of a Socialistic or Communistic method of administering Medical Care.

Listen! Read! Think! and get ready to meet this question.

There will be a meeting of the Department of Clinical Education in January, probably just about the time of the mid-winter meeting of the Council. Members of the Department will be advised of the date later.

R. D. Bates, M. D.,
Chairman, Department of Clinical Education.

New Devices for Post-Graduate Education.

Reports of two committees at the Richmond meeting of the Medical Society of Virginia indicated means that should be more highly developed for more effective educational results. The Standing Committee on Medical Education and Hospitals commended the excellent programs now being offered by component societies in most sections of the State and inquired "if it might not with advantage be made a more universal custom that the office of the Secretary of Clinical Education be authorized to send out postcard invitations to members of the State Society residing in the adjoining councilor districts, or at least to those resident in the counties immediately adjoining the councilor district in which the meetings may be held." If, as the Committee seems to feel, such invitations would prove a stimulus to other societies to maintain their standards, doubtless the Department of Clinical Education at its next meeting will take some action toward expanding and perfecting the activities of this kind it has engaged in at the request of a few societies.

The report of the Library Committee, supplemented by an announcement in the section of News Notes in the Medical Monthly, explaining that the facilities of three medical libraries are offered to the members of the Medical Society seems to place upon the Department of Clinical Education the responsibility of devising effective means for popularizing these services. It is difficult at best to follow special study or courses of reading at a distance from the source of supply, and the handicap of the borrower by mail should be removed if possible by making it easier to obey that impulse.

Another Step Towards Pediatrics Courses.

Through its Committee on Child Welfare, several members of the Virginia Pediatric Society have volunteered to give their services for three days' teaching in the spring, if groups of physicians desiring a course in that subject can be organized. Cooperation between the Pediatric Society, which for its part will undertake to outline a suitable course and furnish qualified instructors, and the Department of Clinical Education, which will exercise its good offices in the organization of classes where they are desired, may mean by the coming of spring a possible offering of a distinct educa-

tional opportunity. Details of the proposals already advanced are being shaped in a program to be submitted to the Department of Clinical Education at its next meeting, perhaps in January.

Geo. W. Eutsler, *Executive Secretary, Department of Clinical Education.*

The Half-Way Mark in Dr. Lapham's Courses in the Southwest.

With the completion of five meetings of the courses in prenatal and postnatal care in Wytheville, Galax, Roanoke, Christiansburg and Pulaski conducted by Dr. Maxwell E. Lapham, Field Clinician of the Joint Committee on Prenatal and Postnatal Instruction, the enrollment has remained at a total of fifty-one. But additional visitors have come into them among whom, for the Galax class, are Drs. E. C. Elliott, J. C. Moxley and H. T. Smith, and for the Roanoke class, Drs. J. C. Robertson and N. M. Robinson. The average attendance for the classes has been 46.4 each week, while the percentage of attendance for the enrolled members is 79.6, a slightly higher rate than for any previous circuit.

The Joint Committee has been able to secure for Dr. Lapham a standard manikin and doll. The purchase of this useful equipment was entered upon after it had been requested by many members of previous classes and after experiments with borrowed materials. In the first stages of its use the equipment seems to be giving the satisfaction that was expected.

Plans for the Fourth Circuit.

Dr. Joseph D. Collins, President of the Norfolk County Medical Society, has appointed Dr. E. W. Rawls, of Portsmouth, to the chairmanship of the committee to have charge of the organization and conduct of the class in prenatal and postnatal care in that city. The course will begin in the last week of January.

The committee in charge of the Norfolk class—Dr. C. J. Andrews, Chairman, and Drs. H. W. Rogers, M. B. Savage, Wallace Spigel and T. N. Vorbrinck—has mapped out a series of letters of information and invitation to the doctors of Norfolk and vicinity.

Definite enrollments for the fourth circuit include those of thirteen Negro physicians of Norfolk and Portsmouth for whom the Joint Committee wishes to organize a class if Dr. Lapham's schedule permits. The colored physicians already enrolled are: Drs. D. W. Byrd, E. D. Burke, J. T. Cannaday, C. R. S. Collins, A. C. Fentress, G. Hamilton Francis, U. S. G. Jones, S. F. Moore, E. W. Murray, J. L. Sapp, A. J. Strong, F. R. Trigg and J. Q. A. Webb.

Two Weeks' Course in Bedford County.

Dr. T. P. West, President of the Bedford County Medical Society, has been instrumental in furthering the formation of a class in Bedford. The physicians of that large county, inconveniently located in respect to the prenatal and postnatal study groups in Lynchburg and Roanoke, have applied for Dr. Lapham's services in an intensive course of two weeks. The tentative plan is for the course to be held April 10th-21st. The enrollments already secured by Dr. West for the Bedford course are those of Drs. R. A. Bennett, C. H. Bondurant, E. L. Johnson, W. O. McCabe, B. A. Rice, M. P. Rucker, T. P. West and G. L. A. Pogue.

Geo. W. Eutsler, *Secretary, Joint Committee.*

Proceedings of Societies

The Lynchburg Academy of Medicine, Inc.,

At its meeting on the night of December 5th, at the Virginian Hotel, Lynchburg, elected the following officers for the coming year: President, Dr. Sam Wilson; vice-president, Dr. R. D. Caldwell; secretary-treasurer, Dr. John Hundley, Jr., all of Lynchburg. The retiring officers are Drs. D. P. Scott and Ernest G. Scott, as president and secretary, respectively.

A motion was passed at this meeting, inviting the Medical Society of Virginia to hold its next meeting in Lynchburg. This invitation is to be transmitted to the Council at its winter meeting.

The Fauquier County Medical Society

Met at Manassas, Va., December 1, 1932, with Dr. Stewart McBryde, Vice-President of the Society as host. The doctors, dentists and druggists of Prince William, Fauquier, Culpeper, Rappahannock, Loudoun, Fairfax and Arlington Counties, also a number of promi-

nent men in the profession from the cities of Washington, Alexandria, and Fredericksburg were invited to this meeting. There were seventy-five present.

Dr. John T. Sprague, President of the Society presided. A speech of welcome was made by Dr. Stewart McBryde with Dr. Sprague replying. At the business session which followed, Dr. Charles B. Martin, of Nokesville, and Dr. Benjamin Phillips, of Quantico, were elected to membership.

The guest speaker was Major General Robert U. Patterson, the present Surgeon-General of the United States Army. He spoke on Veterans' Benefits, gave a most interesting history of the office of Surgeon-General since the days of George Washington, and paid high tribute to the following men, all officers of the United States Army, and all well known throughout the world: Surgeon-General George M. Sternberg, William C. Gorgas, Thomas Letterman, Walter Reed, Fred F. Russell, and Carlos Findley. General Patterson's speech was discussed by Drs. John T. Sprague, S. T. Noland, W. O. Bailey, and M. B. Hiden.

The meeting then adjourned and was followed by refreshments, including an excellent supper. Music was furnished by Dr. McBryde, and there was singing and dancing after supper.

Dr. M. B. Hiden, Warrenton, is secretary of this Society.

Roanoke Academy of Medicine.

The first hospital meeting of the Roanoke Academy of Medicine for the current year was held at Jefferson Hospital, Roanoke, on Monday evening, December 5th. The following program was presented by members of the hospital staff:

Skin Grafting—Dr. Frank G. Slaughter.
Club Feet—Dr. Roy M. Hoover.
Glandular Fever—Dr. J. R Perdue.
Occiput Posterior—Dr. A. M. Groseclose.
X-Ray Diagnosis of Gastric and Duodenal Ulcer—Dr. C. H. Peterson.
Surgical Treatment of Gastric and Duodenal Ulcer—Dr. Hugh H. Trout.
Medical Treatment of Gastric and Duodenal Ulcer—Dr. George B. Lawson.

Dr. C. H. Bondurant, of Bedford, was elected to membership.

The next regular meeting of the Academy is to be on Monday evening, January 2nd.

James City-New Kent County Medical Society.

There was a meeting of this Society on December 1st, at the Wayside Inn, Toano, Va., at which time a delightful supper was served. Dr. H. U. Stephenson, of Richmond, was the guest of the Society. Dr. T. B. Henderson, of Williamsburg, read an article from the *Literary Digest* on "California's Plan for Lowering Medical Costs." This was discussed by the members.

Dr. A. M. Sneed made a motion, seconded by Dr. E. B. Kilby, that the Society hereafter have one member at each meeting to read an article or discuss a case report.

Dr. J. R. Parker suggested that the Society arrange for one of the pre-natal and post-natal clinics, to be held in the county next year.

There being no further business, the meeting adjourned.

J. R. Tucker, *Secretary.*

Richmond Academy of Medicine.

At the meeting of the Academy of Medicine, on December the 13th, Dr. Charles P. Howze, Washington, D. C., and Dr. Chas. C. Haskell, East Orange, N. J., both formerly located in Virginia, presented papers by invitation. At the annual election of officers which followed, Dr. Carrington Williams was elected president for the ensuing year. Other officers elected at this time were Dr. Turner S. Shelton and Dr. Powell Williams, as vice-presidents, and Dr. Thomas D. Jones, as secretary-treasurer. All are of Richmond.

News Notes

Greetings for the New Year!
May it be One of Happiness for You and Yours

"Medical Care for the American People"

Is the title of the final report of the Committee on the Costs of Medical Care. It is based on five years of intensive study, and contains the Committee's final recommendations. It should be of interest to people in all walks of life and especially to physicians and those of similar interests. The Editorial Department of this issue of the Monthly and the President's Message are given over to a dis-

cussion of this subject. The book named above may be had from your bookstore for $1.50 or for $1.60 postpaid from the publishers, The University of Chicago Press, 5750 Ellis Avenue, Chicago, Ill.

The Seaboard Medical Association of Virginia and North Carolina

Held its annual meeting at Rocky Mount, N. C., December 6th, 7th and 8th, under the presidency of Dr. Edmund S. Boice, of that place. There was a large attendance and entertainments were delightful. In addition to a large number of volunteer papers, there was a most interesting symposium on pneumonia, a contribution from members of the faculty of Duke University, Medical School. In connection with this, there were exhibited a large number of gross specimens of lung, heart, and other viscera, as well as hundreds of lantern slides. The Association conferred a fellowship on Dr. Wiley D. Forbus, of the Duke Medical School, who took part in the symposium.

A beautiful memorial service was held in memory of members who had died since the last meeting. Among those passing were several ex-presidents: Drs. Junius F. Lynch, E. C. S. Taliaferro, George A. Caton, and Albert Anderson. Others who died during the year were Drs. Charles R. Grandy, J. B. Abbitt, E. D. Hunter, Mark W. Peyser, and J. M. Hodges.

Officers elected for the ensuing year are: President, Dr. Walter B. Martin, Norfolk, Va.; Vice-Presidents, Drs. W. Bernard Kinlaw, Rocky Mount, N. C.; Oscar R. Yates, Suffolk, Va.; John C. Tayloe, Washington, N. C.; and Robert Matthews, Norfolk, Va.; Drs. A. M. Burfoot, Fentress, Va., and Clarence Porter Jones, Newport News, Va., were re-elected treasurer and secretary, respectively. This will make the twenty-second consecutive year for Dr. Jones in this office. It was voted to hold the 1933 meeting next December in Norfolk, Va.

The Richmond (Va.) Ophthalmological and Oto-Laryngological Society,

At its annual meeting, held the middle of December, elected the following officers for the ensuing year: President, Dr. R. W. Vaughan; vice-president, Dr. Geo. H. Snead, and secretary-treasurer, Dr. W. R. Weisiger, the retiring president and former secretary. This Society is composed of eye, ear, nose and throat specialists of this city and holds monthly meetings for the discussion of scientific matters.

Dr. Clifton R. Titus,

Of the class of '31, Medical College of Virginia, and for a short time located at Lucketts, Va., is now established at Bassetts, Va., where he is engaged in the general practice of medicine and is associated with the Stanley Furniture Company of Stanleytown, Va.

Dr. W. P. Parrish,

Chatham, Va., recently a patient at Memorial Hospital, Danville, has returned home much improved.

Dr. F. A. Sinclair,

Newport News, Va., was elected president of the Tidewater Fox Hunters' Association, at its annual meeting the last of November. He and Dr. A. M. Sneed, of Toano, Va., were also named as two of the directors of the Association.

News Notes From Medical College of Virginia.

The Medical College of Virginia observed Founders' Day at noon Thursday, December first, by an academic procession and an address by Dr. Ray Lyman Wilbur, Secretary of the Interior, and president of Leland Stanford University on leave. At the exercises held at Monumental Church, Dr. E. C. L. Miller, directing librarian, read a brief paper on the scope and activities of the library and invited the profession to use the facilities of the library, both in person and by mail. During the afternoon and evening, the new library building was open to visitors and tea was served from four to six by the wives of the staff of the College.

Dr. W. G. Crockett of the school of pharmacy attended the annual meeting of the National Druggists in Washington on December 14th.

Dr. Harry Bear, dean of the school of dentistry, was a recent guest of the New Haven Dental Association, at its annual meeting. Dr. Bear read a paper on the principles of exodontia and while in New Haven visited Yale University dental school.

The board room of the new library building where meetings of the faculty and board of visitors are held is to be known as "The

Founders Room." Plans are under way to assemble in this room the portraits of the six founders of the college as well as articles and instruments used by them. It is also planned to place in this room instruments, books, and other articles of professional and personal interest belonging to physicians of an older day whose names are associated with the College. The College is so rich in history that every effort is being made to collect everything of either professional or personal interest belonging to early members of the faculty, in order to preserve them for future generations. The College will soon celebrate its one hundredth anniversary and it is hoped by that time the collection in its library will be a museum of special interest to the profession.

The work of the out-patient department continues to break all previous records for service. During the month of November 5,082 patients were handled, which is an increase of 650 over the same month of 1931. Forty-two per cent of the patients handled were white and 58 per cent colored. A new clinic was established for investigation and advice in problems of nutrition.

Dr. Edward H. Cary, President of the American Medical Association, spoke to the student body of the Medical College of Virginia on a recent visit to Richmond. He was one of the principal speakers in the dedication of the new home and library of the Richmond Academy of Medicine.

Dr. Arthur P. Little has been appointed to the professorship of prosthetic dentistry in the school of dentistry, Medical College of Virginia, Richmond. For a number of years he was engaged in important research in his field of specialization.

Faculty and Staff Meetings.

The regular scientific monthly meeting of the Faculty and Staff of the Medical College of Virginia was held on Thursday, December 15, 1932, at 8:15 P. M., in the auditorium of the Saint Philip Dormitory.

The program was as follows:

1. "Case Report of Necro-bacillosis of the Lung." Dr. W. A. Farmer.
2. "Case Report of Lateral Sinus Thrombosis." Dr. Karl S. Blackwell.
3. "The Solubility of Enamel and Its Relation to Dental Caries." Dr. J. C. Forbes.

The next regular scientific monthly meeting of the Faculty and Staff of the Medical College of Virginia will be held on Thursday, January 19, 1933, at 8:15 P. M., in the auditorium of the Saint Philip Dormitory.

The program will be as follows:

1. "Diabetes, Congestive Heart Failure, Coronary Thrombosis. A Case Report." Dr. William B. Porter.
2. "An Investigation of the Effect of a Ketogenic Diet on Normal People." Dr. F. L. Apperly.

I. A. Bigger, M. D.,
Chairman.

Dr. Bob Lewis Field,

Of the class of '31, Medical College of Virginia, who recently completed an internship at Norfolk Protestant Hospital, has located in Norfolk, Va., with offices at 38th Street and Hampton Boulevard. He will be engaged in general practice.

Dr. J. Arthur Gallant,

Richmond, Va., announces the removal of his residence and office to 201 North Boulevard, this city.

Annual Report of the Surgeon General, U. S. Navy.

This report discusses the activities of the Medical Department of the Navy during the fiscal year ending June 30, 1932, and gives the statistics dealing with the health of the Navy for the calendar year ending December 31, 1931. The vital statistics for the calendar year 1931 do not appear as favorable as for 1930, the statistics for that year reaching favorable points that have rarely been surpassed. In 1931 there was an increase in the general admission rate. This is accounted for principally by the higher prevalence of influenza and the so-called common respiratory diseases. There was a slight advance in the death rate. There was a decided increase in deaths from motor-vehicle accidents, practically all of which resulted from injuries received while on leave or liberty. Deaths from this cause exceeded those from drowning, which was slightly higher than for the preceding year.

The number of sick days per person was smaller than for any previous year since 1913, except 1917 and 1925. The rate of aviation

fatalities per 10,000 flying, was lower than in any year since aviation became an important part of the Naval activities.

There was no major disaster in the service during 1931, although several lives were lost in Nicaragua and British Honduras.

During the fiscal year, the cost to the Navy for medical care was the lowest since the beginning of the accounting system, which was established in 1924. Cost of medical care has been reduced from approximately $105 in 1929, to $92 in 1932, or a reduction of $13.00 per individual.

On June 30, 1932, the Medical Corps numbered 904 members. During the year fourteen new medical officers were commissioned, while thirty-six became separated from the service—sixteen by resignation, sixteen by retirement, three by death and one by dismissal.

Dr. Willcox Ruffin,

Class of '26, University of Virginia, Department of Medicine, after completing a four-year surgical fellowship at the Mayo Clinic, has opened offices at 708 Wainwright Bldg., Norfolk. His practice will be limited to surgery.

Dr. J. Shelton Horsley,

Richmond, Va., was elected chairman of the board of trustees of the Southern Medical Association at its meeting recently held in Birmingham.

As announced in our December number, this Association is to hold its 1933 session in Richmond, Va.

The American College of Physicians

Is to meet in Montreal, Canada, February 6-10, 1932, under the presidency of Dr. Francis M. Pottenger, of Monrovia, Calif. Headquarters will be at Windsor Hotel. The General Chairman in charge of local arrangements is Dr. Jonathan C. Meakins, of McGill University Faculty of Medicine. For further information, address Mr. E. R. Loveland, executive secretary, 133-135 South 36th Street, Philadelphia, Pa.

Dr. Hans Molitor Receives Appointment.

Geo. W. Merck, President of Merck & Co., Inc., recently announced the appointment of Dr. Hans Molitor, of the University of Vienna, to the research staff of the company. Dr. Molitor will assume the direction of research work in pharmacology. To provide adequate facilities for this research work, Merck & Co., Inc., despite the depression, is constructing at Rahway, N. J., at the present time, a research laboratory to cost in excess of $200,000, which will house a staff of twenty-five research chemists. Dr. Molitor will take over the supervision of the details of equipping and staffing the Laboratory to be devoted to research in pharmacology.

Dr. Molitor comes to this country with a background of scientific accomplishment in universities and hospitals, having studied and worked in several European countries.

Dr. D. Hunter Marrow,

Of Boydton, Va., in accordance with his custom of some years, has gone to Florida for the winter. He was accompanied by his family and will spend the winter at Daytona Beach.

Dr. F. R. Crawford,

Recently returned from Kashing, China, has located again at Farmville, Va., where he is engaged in the practice of surgery and gynecology.

The Association of American Medical Colleges,

At its annual session in Philadelphia, in November, re-elected Dr. Louis B. Wilson, Rochester, Minn., as president. Dr. Ross V. Patterson, of Jefferson Medical College, Philadelphia, was elected vice-president. The 1933 meeting will be held in Minneapolis.

Dr. Charles B. Martin,

Recently of Danville, Va., has located at Nokesville, Va., where he is engaged in general practice. Dr. Martin is a member of the class of '27, Medical College of Virginia.

Dr. J. Allison Hodges,

Richmond, Va., announces that his offices are now located at 924 West Franklin Street, this city.

Dr. Charles R. Vance,

Norfolk, Va., announces his change of address from Taylor Building to 706 Maury Place, that city.

State Five Point Representatives Come to Richmond.

Delegates from forty-three counties and seven cities in the State attended the Five Point Rally on November 25, 1932, as guests of the City of Richmond. These delegates who represented their counties and cities at the

Rally were selected from the schools havnig the highest precentage of Five Point children—those who have attained the State minimum standard of normal or corrected vision, hearing, throat, teeth, and weight.

The Woman's Auxiliary of the Richmond Academy of Medicine entertained the delegates at luncheon in the Academy building. A Roll Call gave each one an opportunity to give his name and the county represented. Other guests included Mrs. J. Allison Hodges, ex-President of the Woman's Auxiliary of the Medical Society of Virginia; Miss Ellen Smith, Chairman Program Committee; Dr. J. Allison Hodges, a former president of the Medical Society of Virginia: Dr. R. Cary Montague, City Missionary, Dr. B. B. Bagby, Director Bureau Child Health. State Department of Health, Mr. E. V. Graves, State Supervisor of Physical and Health Education, State Department of Education, and his eight assistant supervisors.

During the morning the children visited the places of interest in and around the Capitol Square. In the afternoon Dr. H. J. Eckenrode, State Historian, conducted a historical tour of Richmond for them.

This trip will be a notable event in the lives of these children, adding not only to their pride in their school and their county, but to their appreciation of health values. Knowledge of their capital city and its connection with Virginia history will be indelibly impressed on their minds.

Dr. McGill Acting for Dr. Romaine.

Dr. E. L. McGill, Petersburg, Va., was appointed to act as city health officer of that place, during the absence of Dr. Mason Romaine, who was given a two months' leave of absence. Dr. Romaine has been spending most of this time in Italy.

Stuart Circle Hospital Opens New Department.

A completely equipped physiotherapy department has been installed by the Stuart Circle Hospital, Richmond, Va. The department will be in charge of Miss Elsa M. Lange, a graduate of Walter Reed Hospital, who is a technician of physiotherapy with special experience and qualifications.

The services of this department have been offered free by the hospital to the Instructive Visiting Nurse Association and the Sheltering Arms Hospital to assist in the treatments ordered by physicians for ambulatory patients. It is felt that such treatments may assist medical and surgical cases, and the hospital offers this service as its contribution in meeting the need for medical care of those affected by the present social conditions.

Brunswick County Retains Health Unit.

The board of supervisors of Brunswick County, at its regular meeting early in December, voted unanimously to retain its health unit which is composed of Dr. T. H. Valentine, health officer, of Lawrenceville, and Miss Virginia Duling, nurse.

The Radiological Society of North America,

At its annual meeting in Atlantic City, November 28th through December 2nd, named Dr. W. Herbert McGuffin, Calgary, Alta., Canada, as president-elect. Dr. Bryon H. Jackson, of Scranton, Pa., succeeds to the presidency of the Society the first of this year. It was voted to hold the next annual meeting in Chicago, in September, 1933, as part of the International Congress on Radiology. At the meeting in Atlantic City, Dr. Leon Menville, of Tulane University, School of Medicine, New Orleans, was awarded the gold medal of the Society.

The Southern Surgical Association,

Which met at Miami, Fla., the middle of December, elected the following officers for the ensuing year: President, Dr. Vilray P. Blair, St. Louis; vice-presidents, Dr. W. Barnett Owen, Louisville, Ky., and Dr. E. H. Adkins, Miami; treasurer, Dr. Lloyd Noland, Birmingham, Ala.; and secretary, Dr. R. L. Payne (re-elected), Norfolk, Va. The council selected Hot Springs, Va., as the place for the next meeting, which will be held December 12-14, 1933.

Dr. Stuart McGuire,

Richmond, Va., attended the Bi-County Medical Society at Kingsport, Tenn., on December 7th, at which time he read a paper on the subject of "The Acute Abdomen."

Dr. C. S. Stone,

And family, for some time of Farmville, Va., are now at Raleigh Court Apartments, University Circle, University, Va., while Dr. Stone is taking special work at the University.

Dr. Clyde F. Ross,

Richmond, Va., one of the leaders several years ago in the formation of the Richmond Alumni Chapter of Sigma Chi Fraternity, has

been named president of this chapter for the ensuing year. Dr. O. B. Darden was named first vice-president.

Dr. Robert McClanahan,

Of the class of '29, University of Virginia, Department of Medicine, after completing a special service at the New York Eye and Ear Infirmary, New York City, has located in that city with offices at 780 Park Avenue.

Prize Again Offered by American Association for Study of Goiter.

The American Association for the Study of Goiter, for the fourth time, offers three hundred dollars ($300.00) as a first award, and two honorable mentions, for the best three essays based upon original research work on any phase of goiter presented at their annual meeting in Memphis, Tenn., May 15, 16 and 17, 1933. It is hoped this will stimulate valuable research work, especially in regard to the basic cause of goiter.

Competing manuscripts must be in English and submitted to the Corresponding Secretary, J. R. Yung, M. D., 670 Cherry St., Terre Haute, Ind., U. S. A., not later than April 1, 1933. Manuscripts arriving after this date will be held for the next year or returned at the author's request.

Dr. M. Cohen,

Class of '31, Medical College of Virginia, who interned at the Conemaugh Valley Memorial Hospital, Johnstown, Pa., has located in Richmond, with offices at 205 North Nineteenth Street. He will be engaged in general practice.

Dr. Richard B. Nicholls

Recently located in Norfolk, Va., with offices at 400 Wainwright Building with Dr. G. Bentley Byrd. He is specializing in obstetrics and gynecology. Dr. Nicholls graduated from Jefferson Medical College, Philadelphia, in 1930, following which he had a one year rotating interneship at Methodist Episcopal Hospital that city and a one year post-graduate residency at Philadelphia Lying-In Hospital.

Dr. Ruth S. Hart,

Of the class of '31, University of Virginia, Department of Medicine, who interned at the Tampa Municipal Hospital, Tampa, Fla., has now located at 119 Morse Boulevard, Winter Park, Fla.

Dr. John J. Hulcher,

Richmond, Va., who during the World War served as captain in command of Ambulance Company 319, 305th Sanitary Train in France, has been awarded the Order of the Purple Heart by the North Richmond Post No. 38, American Legion.

Dr. Tyler R. Boling,

Class of '31, Medical College of Virginia, who has recently been in private practice in Tazewell County, Virginia, is now at Beckley, W. Va., where he has been appointed House Physician at the Rutherford State Sanitarium.

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Hourly Nursing Service.

The Private Duty Nurses' Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full-time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

For information, dial 3-1656. (*Adv.*)

Obituary Record

Dr. John Hack Ayres,

Prominent physician and business man of the Eastern Shore of Virginia, died December 8th, at his home in Accomac, Va., after an illness of several months. He was born at Pungoteague, Va., 67 years ago, and graduated in medicine from the University of Maryland in 1888. He located at Accomac shortly thereafter and had lived there continuously with the exception of the time he spent in Baltimore, taking a post-graduate course at Johns Hopkins University and attending clinics conducted by Dr. Osler. He joined the Medical Society of Virginia in 1891 and had

taken an active part in medical affairs of the State ever since. He was for a number of years a member of the State Board of Medical Examiners, having resigned less than two months ago on account of his health. Dr. Ayres was identified with many civic interests in his section of the State, and was a Mason, Knight Templar and a member of other fraternal organizations. His wife and three children survive him.

Dr. George Keesee Vanderslice,

Phoebus, Va., died December 19th, following a short illness of pneumonia. He was sixty-two years old and a gradnate of the University of Virginia, Department of Medicine, in 1892. Dr. Vanderslice had been coroner of Elizabeth City County for the past thirty years, and had been a member of the Medical Society of Virginia for thirty-eight years. His wife and six children survive him.

Dr. Walter Merritt Seward,

Triplett, Va., died December 20th, at the University of Virginia Hospital, to which place he was carried for treatment, two days after Thanksgiving. Dr. Seward, who was 70 years of age, studied medicine at the University of Virginia, receiving his medical degree from that institution in 1886. For a number of years thereafter, he practiced in New York City. Retiring from practice about ten years ago, he returned to his native county—Brunswick—in Virginia, and there entered upon farming on a large scale. He was unmarried. Dr. Seward had been a member of the Medical Society of Virginia for some years and was also a fellow of the American Medical Association.

Dr. William Sydney Thayer,

Of Baltimore, internationally known authority on internal medicine, died in Washington, D. C., December 10th, following a heart attack. He was born in Milton, Mass., in 1864 and graduated in medicine from Harvard University in 1889. Dr. Thayer was professor emeritus of the Johns Hopkins School of Medicine. He was a past president of the American Medical Association, of the Association of American Physicians, the Interurban Clinical Club, the American Society of Tropical Medicine, and the American Society for Clinical Investigation.

The will of Dr. Thayer directed that his body should be given to scientific study before being cremated and buried at Concord, Mass.

Dr. Albert Anderson,

For the past nineteen years superintendent of the State Hospital at Raleigh, N. C., died October 16th, at the age of seventy-two years. He graduated in medicine from the University of Virginia, Department of Medicine, Charlottesville, in 1888. He was a past president of the North Carolina Medical Society and held many other positions of honor in the medical profession in his State.

Dr. George A. Caton,

Of New Bern, N. C., died October 17th, as the result of a fall in which his skull was fractured. He was sixty years of age and graduated from the Medical College of Virginia, Richmond, in 1898. Dr. Caton was president of the Seaboard Medical Association of Virginia and North Carolina in 1926.

Resolutions on Death of Dr. A. L. Gray.

WHEREAS, On October 13, 1932, our fellow member and former president, Dr. Alfred Leftwich Gray, passed to his eternal rest:

BE IT RESOLVED, That the Richmond Academy of Medicine feels keenly the loss of one whose integrity, excellent and impartial judgment, steadfastness of purpose and professional ability won the highest respect of his colleagues and made him a valued member of many of their most important councils. His sterling qualities were further attested by the fact that in addition to being made president of this Academy, he later became president of the Medical Society of Virginia, and as a roentgenologist of national reputation, held many important offices in the American Roentgen-Ray Society, being elected to the presidency in 1914. His long record as a preceptor in the University College of Medicine and the Medical College of Virginia, and his work as Dean of the School of Medicine of the latter institution, bear evidence that as an educator he served faithfully and well.

He gave generously of his time and labor to matters concerning the welfare of the medical profession and was always deeply concerned in acting for its better interests.

In his specialty of Roentgenology, Dr. Gray achieved and maintained a reputation well deserved. His ability and character were an inspiration to others in his specialty and he often served as a wise counselor in their various problems.

Finally, it may be said that his kindly personality and thoughtfulness for others won for him the affectionate regard of those with whom he came in contact. His genial companionship will be sadly missed by his many friends.

"His life was gentle, and the elements
So mixed in him that Nature might stand up
And say to all the world, 'This was a man.'"

BE IT FURTHER RESOLVED, That a copy of these resolutions be sent to the family of Dr Gray and be incorporated in the minutes of this Academy.

Signed: DANIEL D. TALLEY, JR.,
JOHN L. TABB, JR.,
FRED M. HODGES.

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A THIRD OF A CENTURY OF MEDICAL EDUCATION IN THE UNITED STATES: A CRITICAL APPRECIATION BY A GENERAL PRACTITIONER.*

WILLIAM M. DABNEY, M. D., Baltimore, Md.

A number of years ago my friend, Dr. Hugh H. Young, invited me to read a paper before the Medical and Chirurgical Faculty of Maryland of which he was at that time President. It has been so long ago that I have literally forgotten its title, but I have never forgotten the occasion and never shall. The gist of the paper was the suggestion that a chronic infection of adenoid tissue, especially of the tonsils and adenoids, was the underlying cause of the condition known as cyclic vomiting in children, and the treatment recommended was the radical removal of these organs. I had worked hard on the preparation of the paper, and after a painstaking search of the literature, having found only one reference to tonsil and adenoid infection as a possible cause of the condition, I had taken not a little pride in the fact that I had something out of the ordinary to present, something which might readily prove to be a small but genuine contribution to medical progress.

I had no sooner finished the presentation of my paper than the next speaker on the program, one of our most distinguished nasolaryngologists and a nationally known figure, got up and read a brilliantly sarcastic paper entitled "The Massacre of the Tonsil." If ever a man suffered a fall following pride and had the wind completely taken out of his sails, I was the man. So lasting was the effect, indeed, that my paper was never offered for publication. There I sat, delicately "roasted" by the speaker, and literally sweating from every pore. Then and there I made a solemn vow that never again would I read a paper in public if I could in any way avoid it. In passing I might add that Dr. Young and I are still friends.

Until today I have kept this vow, but when your President and my friend, Dr. Harrison, told me that his regard for my father, the late Dr. William C. Dabney, Professor of Medicine at the University of Virginia, was one of his main reasons for inviting me to address your society, my reverence for my father's memory, with a pride in the fact that after thirty-eight years he had not been forgotten, compelled me to accept.

My decision made, I racked my brain for a suitable subject. The tonsils, or any subject even remotely allied to them, it certainly could not be; "A burnt child dreads the fire." Finally, I recalled that, with the exception of the *humanities*, my father had been more interested in the *educational* side of medicine than in any other. This fact, taken in conjunction with my own unusually broad training and experience, led me to choose *Medical Education.*

I was naturally aware that Medical Education is a highly controversial subject, but it seemed to me that a general practitioner, who, in addition to thirty-odd years of practice, had served some four years on the resident staff of the Johns Hopkins Hospital under Osler, Halsted, Kelly and Williams; had acted as superintendent of a general hospital; had been a member of the Maryland State Board of Medical Examiners; and, during the entire period of his professional life, had been closely associated with the leading members of the medical profession in his state, was better qualified to speak on this subject than on any other. Besides, as the experience I have just related, which dealt with a purely technical topic, was far from reassuring, I decided that "if hung I must be, it had better be as a knave than a fool."

The third of a century covered by my medical life has witnessed the most momentous changes in medical education in the United States that have ever been known. With these changes you are all familiar, and for the purposes of this address it is only necessary to

*Read by invitation at the sixty-third annual meeting of the Medical Society of Virginia, in Richmond, November 1-3, 1932.

compare the conditions which existed in most medical schools at the time of my graduation with those of today.

In 1896, the minimum requirement for graduation at the University of Virginia was the satisfactory completion of a two-year medical course, and even the two-year requirement had been in effect for less than ten years. No preliminary education, in any sense comparable to that which is almost universal today, was required, and after graduation a man could, if he so elected, immediately enter into practice. True, state boards of medical examiners were functioning well in most states and acting as powerful protectors to the public against inroads by charlatans and undesirable practitioners, but, despite this, the general state of affairs was far from ideal. Further changes were necessary and inevitable if medicine, which was still in its youth from the standpoint of science, was to take its place among the acknowledged scientific pursuits. With this end in view, the changes came rapidly, and the present four-year curriculum, with its requirements before and after graduation, has now been in effect, the country over, for a number of years.

In common with most people, I am in full sympathy with the civilizing effects of education, but too rapid progress has sometimes been proven unwise, and frankly I am concerned with conditions as I see them today. I wonder whether, in their enthusiasm for the new science, the comparative handful of able men who were the driving force behind these changes have not neglected the *art* of medicine and the old *humanities*. Since the unit of all medical practice is admittedly the sick individual, as long as individuals differ, so long must the personal side retain its time-honored place in the treatment of disease—and this, no matter how many or great the advances of the scientific side.

For purposes of consideration, the subject may properly be approached from two angles: first, *what ill effects, if any, has the present system had on the intellectual, financial and spiritual life of the recent graduate;* second, *what ill effects, if any, have resulted to the general public?*

I think it will be generally agreed that the graduate of today is, from an educational and cultural standpoint, a far more finished product than his predecessor of some thirty years ago, but, to my mind, he is lacking in certain perquisites to idealistic practice. As a result of membership on the visiting staff of two large general hospitals in Baltimore, I have for a number of years had the opportunity of observing the attitude of successive crops of internes. Almost invariably I have found them upstanding, efficient and well-trained young men, in a word, good doctors, but, with few exceptions, their attitude toward the individual patient has been distinctly impersonal. Moreover, a number of these internes, while bowing without question to the opinions of the chiefs of staff, show a decided tendency to belittle the opinions of the older practitioners. Such a tendency though unjustifiable is, I confess, not unnatural in view of their training. The fault is not so much theirs as that their preceptors have failed to impress on them the fact that *experience* is the greatest of all teachers.

This failure tends to the development of *intellectual standardization*, which in itself is undesirable, but especially so in medicine whose very uncertainties call for a creative type of mind. To put it logically, if judgment is an integral part of the intellectual process, and if judgment in the practice of medicine is largely dependent on accumulated experience, then it follows that any failure on the part of the recent graduate to avail himself of experience tends to limit his judgment.

Again, there are certain internes who, according to my observation, have reacted to their training in an entirely different manner. As a result of having been thrown into more or less intimate contact during the formative period of their intellectual lives with men, their instructors, whom they can never hope to equal, an inferiority complex, as it were, has developed and a timidity in diagnosis and judgment has resulted,—an undesirable consequence and one which may persist for years.

Fortunately, there are not a few internes who have realized, as have most of us older men, that the ideal approach to a professional career is an early appreciation of the fact that, in spite of the many epoch-making advances, the sum total of medical knowledge is still pitifully small, and that even the acknowledged leaders of our profession are leaders not so much by virtue of the profundity of their knowledge as because they are still eager students, constantly in search of an increase in

knowledge. Each member of this group of internes fully realizes that medicine is a hard task mistress, and that if some day he hopes to take his place alongside the elect, he must marshall his every force, his own intimate and critical study offset by the experience and opinions of others, and finally to reach his conclusions by keeping an open mind and by thinking for himself.

To sum up, it appears to me that whereas the modern system gives great and undeniable advantages, it has failed to put sufficient emphasis on certain essentials, and as a consequence has at times produced a lack of initiative and a possible submergence of originality of thought.

Next—What ill effects, if any, from a financial standpoint, has the modern system brought about?

The present curriculum and requirements before and after graduation certainly compel the expenditure of a large amount of money, so large, in fact, that few graduates can afford to settle in the country districts. The result is that today, in spite of the increased number of students enrolled each year, the country districts are largely destitute, and the old-time *country doctor*, than whom no more unselfish and devoted servant of the public ever lived, is almost a thing of the past—a most unhappy result! Surely, a method of education which, forgetful of the fact that the ancient ideal of medicine has always been *unselfish service*, has forced its graduates to become traitors to this ideal, is deserving of criticism.

I know it has been argued that with the advent of the telephone, the automobile and good roads the country doctor is no longer the necessity he once was, and to a certain extent this is true. But, down in our hearts, is there anyone among us who thinks that the town or city doctor who, in response to a telephone call, drives out into the country and, after examining the patient, advises his removal to the hospital, is in any sense as valuable an asset to that community as the old time country practitioner who lived in their midst and was not only the servant of the sick in time of need, whether by day or by night, but neighbor, friend, counsellor, and well nigh priest?

The privilege of practicing in the country and reviving the old order denied him, the beginning practitioner of today locates in either a city or a large town, and gravitates almost immediately into specialism. In view of his education and training, nothing could be more natural. His preceptors in the medical school were, practically without exception, specialists, as were the chiefs of staff in the hospital where he served his interneship. Inevitably then he has drunk deep of the advantages of specialism, its far greater pecuniary rewards and its greatly lessened hardships. So to specialism he turns, unless compelled from pressing financial reasons to take up general practice.

Important as the effects of the present system have been on the intellectual and financial status of the recent graduate, they are, in my opinion, not nearly so important as the effect it has had on his spiritual side. If one grants, as I think we all do, that the ideal of medicine is unselfish service, it follows that any system, no matter how perfect otherwise, which tends to defeat this ideal is in itself imperfect.

It is evident then that there is something amiss, if from financial reasons this system prevents a man from following the calling of the country doctor, and from the same reasons forces a too great percentage of the town and city doctors into specialism to the exclusion of general practice. I do not mean by this to decry all specialism. Specialism in this day of modern medicine is a necessity and many specialists are true idealists, but I wish with all my power to protest against certain evils which I believe have followed insidiously in its train.

I think it would be generally conceded that specialism is largely responsible for the *high cost of sickness* today. Unfortunate as this is, it is in my opinion not nearly so disturbing as the fact that the practice of specialism has so shaken the corner stone on which medicine rests that in many instances the former *servant of the sick has now made the sick his servants.*

It is probable that the rise and brilliant progress of modern surgery is largely responsible for the incidence of this state of affairs, and that the changed and changing conditions of modern life, and especially the modern hospital, have greatly advanced it. When one remembers the unwarranted fear of hospitals which was so widespread as late as thirty years ago, the present preeminence of the hospital is almost incredible.

It has been said that these changes were brought about by a well organized and determined propaganda inaugurated by certain members of our profession. This may or may not be true, but if true I am sure that all those

who participated acted in good faith, with the welfare of both the public and medicine at heart, and that none of them foresaw that the changes would be in any way detrimental to the ideals of medicine.

The practice of hospitalization of patients whenever practicable is susceptible of at least two conclusions as far as the physician is concerned: a lessened degree of personal service to the sick individual, and an enlarged opportunity to attend more patients in a given time.

Now if universal hospitalization were of undoubted value no one could criticize, but actually is it? My own experience with operative cases which concededly call for hospitalization more frequently than any others has certainly not proved it to me. Some years ago it was the general custom among the surgeons of Baltimore to operate on patients in their own homes—not only in Baltimore city and the surrounding country, but even in adjoining states. It was my good fortune to assist at many of these operations and, as far as I have been able to discover, the results compared favorably with those obtained in hospitals.

Furthermore, for one year, at the beginning of my professional career, I was in charge of the Out-Patient Obstetrical Department of the Johns Hopkins Hospital, and my results were equally as good as those of the hospital itself. Today it is a rarity to hear of a modern mother of the upper classes having a baby in her own home. I wonder why?

Medicine and nursing are interdependent professions, and with the attitude of medicine compelling intensive and prolonged education and insisting, as far as possible, on the hospitalization of patients, it is but natural that the nursing profession should fall into line. The present regime of a three-year course as a requirement to graduation in nursing has resulted. This in itself would seem questionable, and when one recalls that the graduate nurse of today can, if she so elects, decline to nurse anywhere except in a hospital, and, in addition, can pick and choose the type of case she is willing to nurse, it is evident that a system which permits this is lacking in the humanities.

With regards to the ill effects, if any, on the public at large, there is little more I can say. The subject has often been exhaustively discussed. But I would like once again to emphasize that a system which has apparently resulted in a dearth of general practitioners in both town and country, a too great increase in specialism with its attendant evils, and a lessened respect for the art of medicine, its spiritual side especially, has probably worked a hardship on the public, no matter if the opportunities for successful diagnosis and treatment are greater than ever before.

But it might be argued: Granted that there may be a modicum of truth in all this, what corrective at this late date is possible? The present curriculum certainly cannot be changed, even if it were desirable, and this is at least questionable. The present hospital system too is universal and so closely interwoven with the practice of medicine in all its branches that surely it cannot be radically changed. If changed at all along the lines suggested, fewer patients would be hospitalized with serious effects on institutions invariably hard pressed for funds. In addition, such enormous sums are already invested in hospitals the country over and so many employees are dependent upon them for livelihood, would not any change be calamitous? The correct answers to these questions I confess I do not know. In fact, I do not know that there is any specific solution for the problems involved. Today, both medical education and the practice of medicine, in the cities especially, tend more and more to take on certain characteristics of "*Big Business*," and this is doubly disturbing now that "*Big Business*" and its sinister offspring, "*Standardization*," are on trial for their very lives. My own feeling is that if "*Big Business*" is to survive, it will be increasingly encumbent on every one connected with it, from the highest to the lowest, to so order his life and actions that the universal outcry will be, "Well done, thou good and faithful servant." And this essentially is my confession of faith in the future of medicine if governmental control is to be ultimately avoided.

With respect to medical education, I fear that nothing can now be done. I had hoped that the change from the two to the four year curriculum would be sufficiently slow to permit of a division into two great branches, the *vocational* and the *scientific*; the requirements for graduation in the vocational class to be a three, or at most four year medical course, confined largely to the practical and clinical sides, and requiring as a preliminary only a high school education; the scientific group to retain the curriculum and requirements before and after graduation of today: this group to be dignified by the title M. D. D. S., (Doc-

tor of Medical Sciences), the first group to retain the present M. D. To safeguard the public and at the same time to limit the field of entry to those whose purpose it is to make the practice of medicine their life work, the present scope of state examining boards might be broadened so as to make it compulsory on each holder of an M. D. degree to stand an examination on the *advances* in medicine at stated intervals. As a further incentive to his continued intellectual activity, it might be arranged that each holder of an M. D. degree have the privilege of presenting the outline of a constructive idea to a learned committee of his fellows, such a committee, for instance, as the committee on scientific research of his state medical society. It would be the duty of this committee to give careful consideration to any such presentation, and, if it be found sound, to assist the proposer to either work the idea out alone or in conjunction with others especially fitted for such purposes. As a further incentive, it might be arranged that any successful exponent would be automatically advanced from the M. D. to the M. D. D. S. class. Many of us from time to time have heard promising ideas advanced which, from lack of opportunity for development, have remained still-born, and it is common knowledge that a large proportion of the advances in medicine so far have been made by men imperfectly trained according to modern standards. Who then can say but that if some such plan were put into effect now it might not bring to light some new star in the medical firmament?

The question of the hospitals and their maintenance is too vast and intricate a subject for me to attempt an answer. As a result of my experience as superintendent of a hospital, I was until of late convinced that if we could successfully solve the problem of the sick person of moderate means the remainder of the problem would not be so difficult.

Some years ago a possible solution occurred to me. As a consequence I approached a patient, a personal friend of mine, and suggested that he donate annually a comparatively small sum for the purpose of partially endowing hospital rooms for patients of moderate means. I pointed out to this gentleman that in giving annually the interest on a comparatively large sum, instead of the principal, not only would he do equally as much good, but the principal would remain in his possession and the amount of his donation be deducted each year from his income tax. Moreover, I pointed out that if the plan proved effective it might be an opening wedge toward its general adoption. He thought well of the idea and gave me a thousand dollars, his sole proviso being that, as far as I could, I would see that it was expended on deserving people. For some five or six years he renewed this donation and it did a great deal of good, but, although I fully explained the idea to each member of the staffs of two hospitals with which I am connected, it was not taken up, for what reason I have never been able to discover.

The present depression makes such a plan impossible now and none other comes to my mind unless it be something modified after the Irish Sweepstake scheme, which, according to the daily papers, has not only freed all the hospitals in Ireland of debt, but supports them comfortably. Personally I can see no reason why we should not take a leaf out of the notebook of our national government which, recognizing the inherent tendency of all mankind to gamble, has instituted a tax on every stock transaction on the New York Stock Exchange. Surely, there is very little moral difference between such taxation and a tax for charitable purposes on the proceeds of a lottery. The law, however, says otherwise. But laws *have been* changed.

This, gentlemen, concludes the ideas which have slowly crystallized in my mind during the past third of a century. Many of them are probably impractical, many of them far-fetched, and many of the conclusions I have drawn perhaps unjustified; but of one thing I feel certain and this is that if medicine, which until now has always occupied a position in the minds of men second only to the priesthood, is to continue to occupy this exalted position, we *must* teach each succeeding generation to keep its spiritual fires burning and its ideals of unselfish service alive. Surely, I might add the need for the one was never more pressing or the opportunity for the other greater than now.

To this end nothing is so helpful as example. Among our illustrious dead two such stand out, Sir William Osler and Sir James Mackenzie. No man of our time was more generally beloved by the profession than Dr. Osler, "The Chief" as we of his Hopkins Staff affectionately called him. Dr. Osler was a great physician, a great teacher, a great man of letters and a great humanist, but I believe that history will record as perhaps the great-

est of his achievements the part his unique personality played in elevating the professional ideals of the English speaking world.

I imagine that few, if any of us here present, knew Sir James Mackenzie personally. I, for one, was never so privileged, but I feel sure that no one could read the life of this extraordinary man without being thrilled. A knight-errant in quest of the Holy Grail, he scaled the heights of professional fame only to find that that which he sought was not there, but in the valley of general practice whence he came. True knight that he was, he straightway retraced his steps, and for the remainder of his days continued his search unceasingly.

Let me then urge each graduate and prospective graduate to read, in all humility, the lives of these two, than whom none have ever more truly combined the science and the art of medicine with the humanities. After so doing, let me urge each one to put to himself that age-old question of the Christian faith: "For what shall it profit a man if he gain the whole world and lose his own soul?"

For my part, throughout my entire professional career I have had such an example in the life of my father who, dying at the age of forty-five, left as his children's greatest and almost sole heritage a simple granite shaft in the little cemetery at the University of Virginia, with this inscription: "Erected by grateful patients and friends as a memorial to his charities, his labors, and his skill."

PERSONAL IMPRESSIONS OF TRANS-URETHRAL PROSTATECTOMY.*

W. W. S. BUTLER, Jr., Roanoke, Va.

The subject to be discussed will interest the 20 per cent of you who are soon to begin having prostatic trouble. My observations are based on twenty-three resections done by myself and on conversations with and cases of others whom I have seen do this work. If you will have in mind the ordeal of a prostatectomy and discomfort and odor of urine saturated dressings for weeks, and compare that with a succession of feeble old men whom you see return from the operating room smiling and within a week able to void in comfort, you will agree with Lowsley's statement that this is the outstanding medical work of this decade. This gives me an opportunity to tell a story: You remember about the ugly duckling who was the scapegoat of the barnyard and later turned out to be a beautiful swan. Now urology with its drudgery of venereal disease has been the ugly duckling among the various branches of medicine and has not turned out to be a beautiful swan but at least we will say has become a proud peacock.

Two years ago at the American Urological Association Meeting in Memphis, Dr. Davis reported one hundred cases done by this method. His results seemed too good to be true. The concensus of opinion among many eminent urologists was that we had best wait and see. This has been my course. Reports are now available in above two thousand cases. A survey of an equal number done by each method in the past five years in the same geographic area shows a recurrence morbidity of twenty-three to one in favor of resection. Further, the reception accorded Dr. Davis by the New York Branch of the American Urological Association eliminates doubt in my mind as to the practicability of the procedure.

Since 1830, the urethral approach to the prostate has been endemic in medical literature. Up to the present, the instruments have depended on a notch in which the obstructing tissue projects and is promptly guillotined with an uncertain amount of bleeding and more uncertain amount of charring and scarring of the urethra. A legacy from these methods is the impression that only a certain type of obstruction is suitable for resection. With the modern instrument, the situation is entirely changed. The resectoscope works on different principles. There are three essentials: cutting without scarring or profuse bleeding, control of hemorrhage, and complete visibility. The electric loop and unit which has been perfected by Dr. T. M. Davis, of Greenville, S. C., not only cuts rapidly but permits a searing of the surface which controls hemorrhage and checks absorption from the lymphatics. Bleeding points are coagulated by merely pressing the other switch. There is an added advantage that a large amount of tissue can be removed with little trauma, because the sheath remains in its position. These essentials have not come through the efforts of any one man. The ingenuity of the cystoscope manufacturers has made possible the remarkable telescopic and lighting system by which we can see clearly in a dark cavity oozing with blood as is the case in the posterior urethra.

The statement should have been included

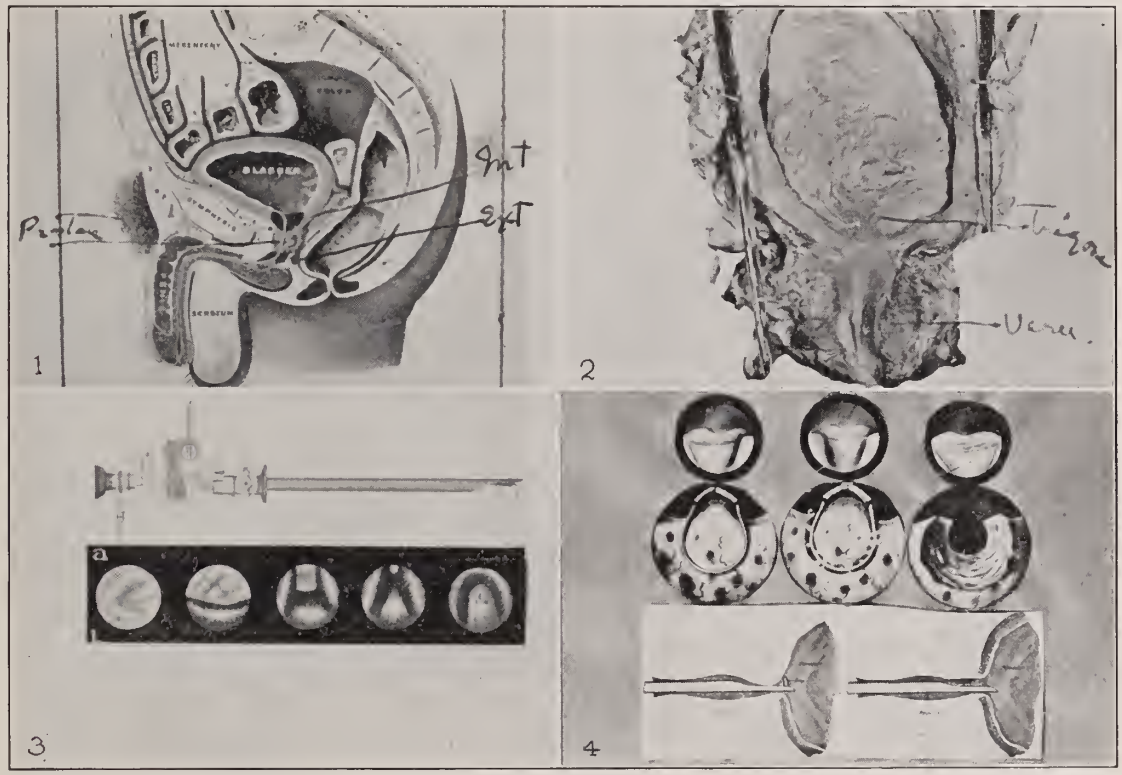
*Read before the Southwestern Virginia Medical Society in Roanoke September 21, 1932. Cases treated between that time and date of publication have been included.

that in this list of essentials the anaesthetic, too, marks the progress of medicine; caudal block permits the entire procedure without pain or shock; low spinal anaesthesia has been entirely satisfactory. A small amount of avertin with nitrous oxide would permit this procedure with little risk.

Of the questions which have been asked, that of recurrence seems to be in the minds of most men. Experience of several years shows that it rarely happens; instead, the remaining portion of the gland shrinks when relieved of the irritation associated with the obstruction, just as occurs after a suprapubic drain. Other questions follow: control of hemorrhage, amount of shock, selection of cases, amount of tissue to be removed, interpretation of statistics, and the practicability of the procedure. These can best be answered by showing the instrument and its mechanics, and also the normal and pathological field in which it is expected to work.

These slides are taken from any source which will illustrate my point, in the main from Randall's Surgical Pathology of the Prostate which shows actual photographs with no retouching.

Each patient, as in any other condition, is an individual problem. First, to be considered are his general condition, age, mental attitude,



Slide 1. From Gray's Anatomy, merely to show the position of the sphincter muscles and the verumontanum, our anterior landmark. Also calls attention to what we would expect to feel on rectal examination. As long as external sphincter is preserved there will be no incontinence. The internal sphincter muscle is usually destroyed by the growth or at operation and prevents semen from being thrown back into the bladder instead of going forward.

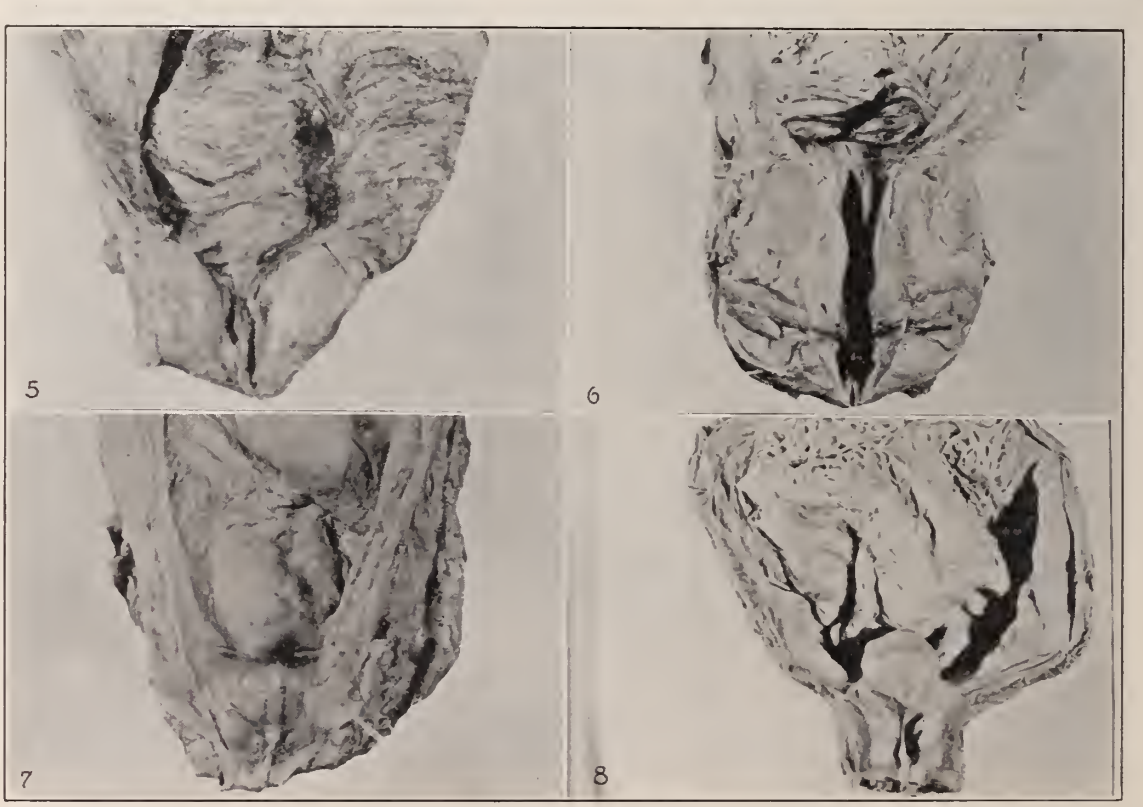
Slide 2. Shows the urethra and the verumontanum, a fortunate provision of nature to mark the anterior border of the prostate and the position of the external sphincter muscle.

Slide 3. Shows McCarthy resectoscope with loop in advanced position and half way back. Lower portion shows endoscopic views as instrument is withdrawn from view of bladder down posterior urethra, disclosing vesical lip, prostate, and finally the verumontanum, our anterior landmark. With the eye of the instrument at this position, we should see the floor of the bladder after resecting the obstructing tissue.

Slide 4. A schematic view of instrument in position to make lateral cut. B. Same as seen before and after cut from in bladder. (Stirling). C. Views of trigone as seen before and after cutting median bar. (Clyde Collings).

cardiac condition and amount of renal toxaemia which I believe is determined better by blood urea than by pthalein elimination. Then local symptoms are degree of difficulty in voiding and frequency and bleeding. For a physical examination, the cystoscope is not available to a man in general practice but he can make a rectal examination and can determine the amount of residual urine. Either may be very misleading if taken alone; large lateral lobes may feel like a presenting head and yet the patient may completely empty his bladder, while a median lobe, large or small, may not be felt on rectal examination and yet produce a tremendous residual. The rectal examination is our best guide as to malignancy. The residual urine is a guide to the amount of obstruction relative to compensatory hypertrophy of the bladder muscle. It is the balance of power between these two which determines the damage to the kidney.

Forearmed with a knowledge of the size and consistency of the gland and the amount of residual, there remains the cystoscopic to determine the tissue projecting into the bladder and urethra to be removed as well as the muscular reaction on the part of the bladder and possible presence of complicating factors as stones and diverticula. Before removing the cystoscope, the position of its beak relative to a finger in the rectum checks the size of the gland. My routine is to take a plain X-ray



Slide 5. From a patient dying of pneumonia in whom a successful punch operation had been done. Note that base of bladder would be seen from the verumontanum.

Slide 6. Shows marked lateral lobe hypertrophy. On rectal examination a large mass could be felt. Entire bladder has been pushed up instead of the gland protruding through the muscle. The interesting feature of this type is that they have attacks of retention and periods of complete relief. This advanced case had best be done by open operation. If very poor risk, resection would give relief.

Slide 7. Compare preceding with this specimen in which posterior commissural fibres have produced the obstruction. Note sharp drop and that the obstruction is at the strategic point producing large residual, though on rectal examination no enlargement would be felt. This type is ideal for resection.

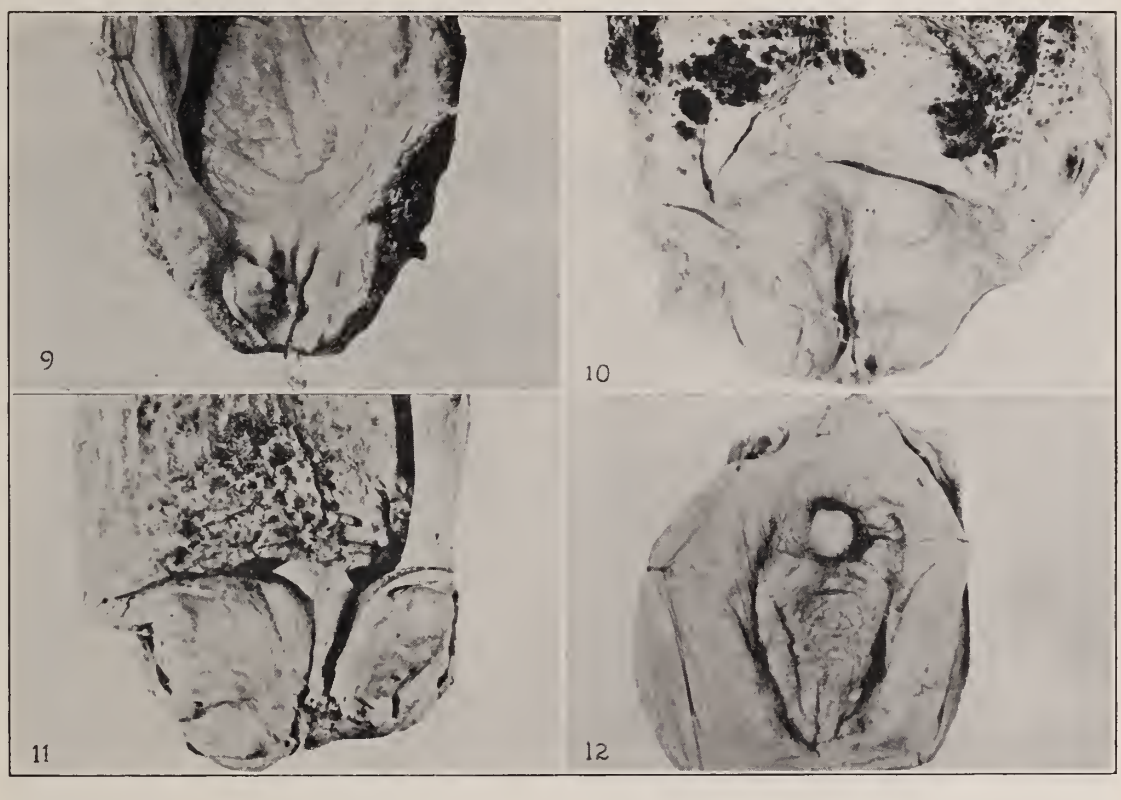
Slide 8. Commissural fibres further hypertrophied project through trigone and are associated with some lateral enlargement. An obstruction of this type would not admit a view of the trigone through the cystoscope.

and cystogram on admission and defer cystoscopy until later.

From a mechanical point of view, there are five main groups to be considered, lateral hypertrophy, median hypertrophy, a combination of the two, malignancy and fibroses, that is, obstruction without demonstrable enlargement of the gland. All of these lend themselves to this method if taken early. The problem is illustrated more easily than it can be described.

My case reports are limited to twenty-three patients treated at the Jefferson Hospital. The clinical result has been entirely satisfactory in fourteen and in three more after a second operation. Three are listed as improved and feel much better but, since there are co-existing conditions, there has not been time to express an opinion. One was unimproved due to lack of cooperation on his part and inexperience on mine. He was a carcinoma with profuse bleeding and left hospital against our advice. There were two deaths; both had been catheterizing themselves for a long time. The first was an emergency but the second would have been prevented by a period of suprapubic drainage.

Case No. 9 was of interest in that he would



Slide 9 Early trilobar hypertrophy suitable for resectoscope. This picture invites our miniature steam shovel to open the road and shows too the advantage of early treatment.

Slides 10 and 11. These represent more advanced cases of trilobar hypertrophy. No amount of rest and dilatation will alter residual urine. Elbow catheter works best. Rectal examination shows gland very broad and a broad shallow groove Cystoscopic examination shows anterior and lateral clefts which do not meet. On combined examination beak of cystoscope not felt. Whether to advise resection or open operation is a question. After a groove is made which permits voiding there may be a marked retraction of the gland. With a very poor surgical risk, trans-urethral resection should be advised. These cases taken early can be handled best with resectoscope. My judgment in an advanced case of this type, if a very poor risk, is to send him with a suprapubic tube or retention catheter and force fluids for a while. This again stresses the advantage that this minor procedure has because by taking away the dread of a major operation we should get them before they reach this stage.

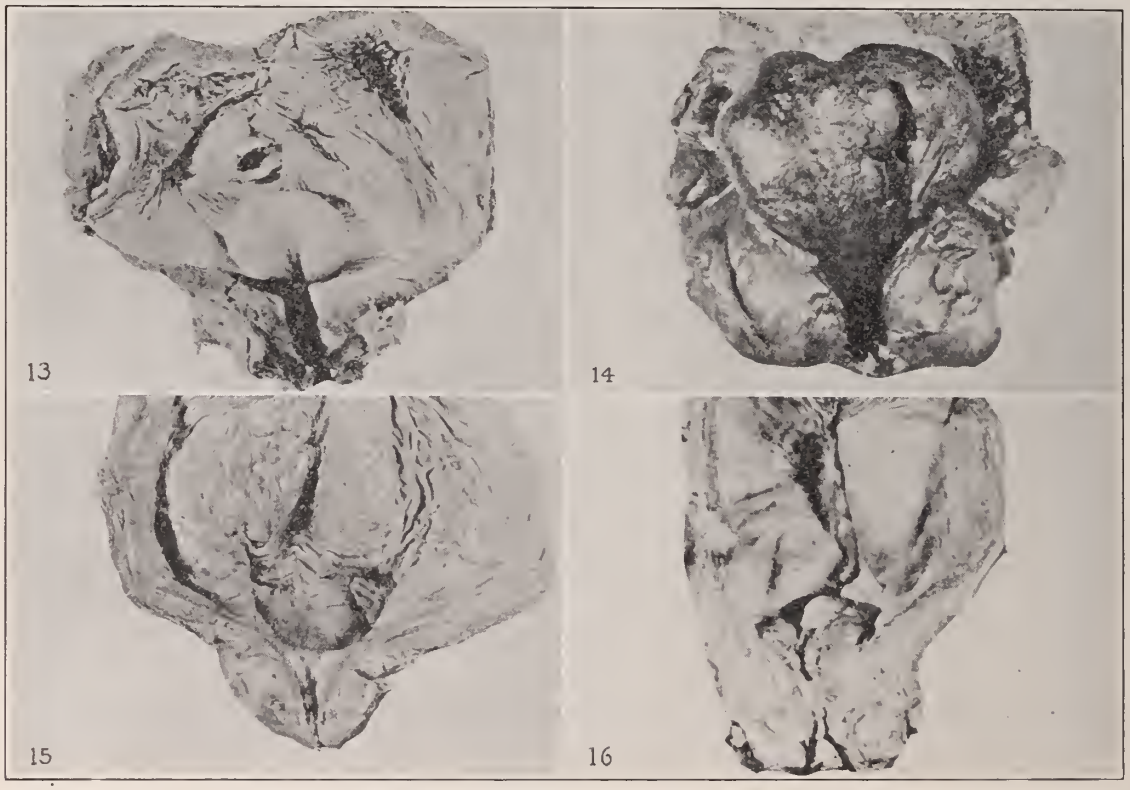
Slide 12. This presents another problem, too large for a punch but admirably suited for the resectoscope. These are hypertrophied urethral glands arising between the verumontanum and posterior lip, and produce an obstruction all out of proportion to the size of the gland. Described by Albarran. Not felt per rectum. On cystoscopic examination, a fissure is noted on each side and instrument will not stay in mid-line but slips into fiissure and may be felt there per rectum.

have been inoperable by the open method. A fibrosis was present and he developed a complete retention. A suprapubic tube was put in and, after three months' drainage, N. P. N. remained above 80 with pthalein 15 per cent in two hours. The odor and discomfort were so unbearable that a resection was done. A few grams of tissue was removed with complete relief and suprapubic wound closed promptly.

Of seventeen cases, fourteen left the hospital in approximately a week after operation but remained in the community another week. The longest stay after operation was in one of the three which were repeated and he left thirty-one days after the first operation. Catheters were removed from fourth to sixth day. There has not been time to say how long urine will remain cloudy; healing is slow even with no residual. In two epididymitis appeared but caused little pain.

In the three in which it was necessary to repeat the procedure, there was fortunately very little pain after the first operation and they lost only the time on account of it. Dr. McCarthy speaks of risk of pyelonephritis following second resection in a short time.

In a most instructive article recently published by Dr. Montague Boyd, of Atlanta, four cases were reported in which the gland was removed by the suprapubic method due to previous failure of resection. From four to seven and a half grams had been removed in each instance. He states that cutting the vesical sphincter probably accounts for at least part of the relief from urinary obstruction which is generally obtained by resection, and



Slide 13. More advanced. Consider how little raw area would probably be left after resection of this.

Slide 14. Shows extreme degree sometimes attained by these glands and in this instance is shown to illustrate that it was not felt per rectum. The preceding, of urethral origin and the posterior commissural type are both clinically median lobe enlargements and most suited to the resectoscope. In this instance, the open method would have been preferable.

Slide 15. Fibrosis—large residual with hypertrophy of trigone and trabeculation of bladder wall. No rectal enlargement. Instrument gripped tightly and fibros.s may draw verumontanum close up to posterior vesical lip. Note sharp drop on entering bladder.

Slide 16. Carcinoma. Obstructing portion can be removed and relief given with little shock. No more can be done by any other method.

obtained in spite of the inflammatory reaction which occurs about the resected area and regardless of the loss of the assistance which the pull of the trigonal muscle on the vesical sphincter offers in voluntary urination.

In my work from three to fifteen grams has been removed. This of course depends on the individual gland but with experience more tissue will be removed.

The immediate relief which these old men experience, their improvement in appetite, arthritis and other toxic symptoms are indeed gratifying. Their gratitude is further accentuated by the fact that there is so little discomfort during and after operation.

This brings up another point, the reduced cost. There is an average stay in the hospital of one week after operation, usually without the need of a special nurse. Note that I say after operation, as the time and expense mounts up during the period of preparation with either a suprapubic tube or retention catheter. In extreme cases, there is less absorption from the suprapubic tube and chances of recovery better. Another complication attending the catheter is epididymitis. If this has not already occurred, it is not likely to follow the operation since we close the lymphatics as the surface is seared in making the cuts and further we are working posterior to the opening of the ejaculatory ducts. These drawbacks and the additional risk are avoided by taking the men earlier. If there are indications of discomfort in the posterior urethra associated with enlargement of the gland, it is not necessary to wait until a residual develops.

In calling attention to the brief hospitalization for this work, it is not my intention to minimize the technical difficulties of the procedure. We are working in a cavity distorted from the normal by a new growth or fibrous contractures and further distorted as we make our cuts. We must be in the position of the engineer who knows where he is at all times, whether his signs are visible or not. To do this a careful examination beforehand of just what tissue is to be removed is essential and this takes a determination of residual, a rectal and cystoscopic as well as a bi-manual examination. Frequently, even then, it is necessary to remove a few tags at a subsequent treatment.

In conclusion, let me say a few words about statistics. We have a tremendously widened margin of safety; we also have a shelf loaded with sufferers inoperable by former methods. One has to lose at the expense of the other.

With the adoption of resection, the open operation becomes unusual and the punch is obsolete. It opens a new field, prevention. We look forward to the time when the urologist will not have to contend with procrastination on the part of both physician and patient but will see the patients before they are seriously crippled by their disease.

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OSTEOMALACIA.*

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Osteomalacia is a disease of the bones in which they become soft and yielding, and thus often undergo marked changes in shape owing to the mechanical action upon them. The bones of the pelvis, back, thighs, arms, and chest are attacked most frequently, but any of the bones of the skeleton may be affected. The disease attacks adults more than children, and females more than males. In women it usually begins in pregnancy or during the nursing period, but it may have no relation to childbearing.

Osteomalacia is characterized by pain, usually beginning in the pelvis or lower lumbar vertebrae. The earliest symptoms are often those of tetany, the patient complaining of numbness of one or more of the extremities. Carpopedal spasm is often present before the pains begin in the pelvis and lower lumbar region. Later on there may be pain in the thighs, upper vertebrae, arms, and ribs. There is much pain on active and passive motion when the disease is at its height. The areas affected are tender to the touch. Because of the pain and tenderness, the patients object to moving and being moved. The woman sits up, usually leaning forward, supporting her arms and head on a pillow or prop. If the disease is not very severe, and the patient can walk about, the gait is waddling, the feet being kept far apart. In other ambulatory cases, the body leans forward, the patient supporting herself by a cane or by the furniture in the room. The attitude of leaning forward is to support as much weight as possible from the shoulders because of the greater pain in the back, pelvis, and thighs.

After several years duration, the body is

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left four or more inches shorter than its normal height, and if kyphotic changes in the vertebral column have taken place, the shortening may be still more. Small nodules can be sometimes felt on the ribs at this time.

When the disease is severe, the patients are usually anemic and look much older than their age. Tetany is present in many cases, and this condition is especially prominent when the pains are severest. The disease is usually worse in winter. Pregnancy and nursing aggravate the condition. The alveolar processes are often affected, and the teeth loosen and may fall out, but dental caries, in the writer's experience, are not frequent.

In China the disease is most prevalent in the central belt of Shansi Province. Shensi and Kansu Provinces in the northwest, and Manchuria, in the northeast, are other centers. A few cases have been reported in other parts of China. Maxwell and Miles (1925) have given its distribution in detail. In 1921 a survey was made in Ping Ting county, which is in east central Shansi. Six villages and two city suburbs were thoroughly canvassed. The villages, where the people depend upon agriculture for occupation and living, had a much smaller incidence than the suburbs of the city. A disease incidence of 1:45 was found among the adult women in the suburbs, and 1:173 among the women in the farming villages. The incidence would be higher than this if only women of the lower age groups were included, since the osteomalacic women contemporary with the older normal women, have largely died off in childbirth.

The survey showed that the disease was more prevalent among the upper and middle classes than among the poor. Very few really poor women were affected. It attacked women who took little exercise and who were deprived of sunshine. A common saying of the people was that it was a "lazy woman's disease." Some patients made special efforts to get about, thus hoping to prevent the progress of the disease.

Following the survey, a careful study of as many cases as were willing to cooperate was begun. In this study of sixty-seven cases it was found that more than 75 per cent of patients with osteomalacia had tetany at one time or another; 28 per cent had a positive Chvostec sign; in 31 per cent the disease began during pregnancy, and in 39 per cent during the nursing period; one-third of the cases reported edema over the affected parts; 80 per cent of the patients were worse in winter and spring; and in 39 per cent the teeth were painful and loose. The dental symptoms disappeared when the general osseous condition improved. All the affected women and girls had bound feet. The average age at which forty-six patients began menstruating was slightly above the normal average for women in this district not affected by the disease. In five cases the disease commenced before menstruation began: in one case six years before, and in another four years. In only one patient the disease had continued in a severe form after the menopause.

The history of the average case would be something like this: Osteomalacic pains, following premonitory numbness and carpopedal spasm, began during the first pregnancy or nursing period following, or during, the second pregnancy. The labor following the initial attack was usually normal and resulted in a living child. The disease remained rather severe during the nursing period. In the next pregnancy the symptoms returned, often more severe, and by this time much deformity in body and pelvis was produced. If there was spontaneous delivery it was after a much prolonged labor and generally with dead child. The third delivery after the onset of symptoms was usually impossible for a living child by the natural route, and often impossible for dead child except by Caesarean section. In many cases the condition developed more slowly than the above.

The diet of the normal women in the belt of Shansi mentioned above was sufficient in calories but was very restricted as to variety. Little meat was eaten by them; vegetables and fruits were very limited, especially in winter; milk and butter were never used; and eggs were seldom eaten. Millet, corn bread, white bread, a salted vegetable, and a fermented vegetable somewhat like sauerkraut, made up the diet. Small amounts of cabbage (*pai tsai*) were used in season. Sesame and hemp seed oils were mostly used in frying.

The diet of the puerperal woman was very deficient in calories and was also poorly balanced from the chemical as well as the vitamin standpoints. The lying-in woman in the Pingtingchow region received nothing but a very thin millet soup the first ten days and this was added to only very gradually the next thirty days. Only after the seventieth day was she allowed a full diet. According to Neal (1916)

the caloric value of the millet received daily during the first ten days is approximately 246.

The women, whether rich or poor, lived in very similar sanitary surroundings. The windows were generally set far in beneath deep eaves and were covered with white or brown paper. Thus sunshine seldom reached the living quarters. The rooms were often dark and ventilation was poor, especially at night. The rooms were heated by the *k'ang*, which is a combination bed, stove, and sitting place. The *k'ang* was elevated about eighteen inches from the dirt or brick floor and was built of bricks and mud bricks. It was heated from a grate which was usually built at the junction of the *k'ang* with the floor, so that the fumes from the coal fire could either escape into the room or pass out through a tortuous flue just under the surface of the bed. Some of these flues opened on the inside of the room rather than on the outside. In that case much coal gas escaped into the room, but there was considerable coal gas even where the flue opened outside because of the opening into the room at the grate. Moreover, the flues were often defective, allowing gas to escape into the sleeping room. Those who worked in the kitchen also were in an atmosphere of coal gas much of the time, since there was no flue or chimney to the stove, all gases and fumes coming out into the kitchen. In this room the ventilation was so much better that carbon monoxide poisoning was not so likely to result. This constant living in an atmosphere of coal gas might have had some influence on the disease.

This form of heating tended to keep the women sitting on the *k'ang*, since the rest of the room was cold. As the disease progressed and movements became painful, the tendency was to spend more and more time sitting on the *k'ang*.

Etiology

One of the earlier opinions of the cause of osteomalacia was that of Fehling (1884) who suggested that the disease was due to a trophoneurosis of ovarian origin. He believed that the changes in the ovaries gave rise to reflex stimulation of the vaso-dilators supplying the bones. In favor of this view are the brilliant results that often follow castration in this disease. According to Koltonski (1921) about 87 per cent of the cases are cured by oöphorectomy. His own case, however, failed to improve until epinephrin, cod liver oil, and phosphorus were given, and he advises castration only as a last resort. McCrudden (1906) reports a case improved after castration, but a year later the patient had a return of all symptoms.

Before the discovery of vitamin D, a deficiency in vitamin A had been advanced as the cause of osteomalacia. In Vienna, Chick and Dalyell (1923) found that the diet of patients with osteomalacia consisted mainly of bread and vegetables with small amounts of flour and sugar. Milk, butter, and eggs had not been used. Lard was not always obtainable. Now a deficiency in vitamin D is thought to be the principal item in the etiology.

Hutchinson and Patel (1921) expressed the opinion that the lack of fresh air and exercise was by far the most potent factor in the production of the disease. Their work was done among the Mohammedan women of Bombay. An examination of a considerable number of persons failed to show that dietetic deficiency was the cause of the disease, as it was fairly common among the wealthier classes.

The belt of Shansi referred to above is located between the parallels of 37 and 39 degrees north latitude and 111 to 114 degrees east longitude, and the inhabited area lies roughly between 2,000 and 4,000 feet above sea level. The soil is largely loess overlying limestone, sandstone, and shale. Farther north cases occur in the Archean region. Water is boiled before it is used for drinking and some of the minerals are precipitated. Most of the cases in China and some of those in India occur at altitudes of 2,000 feet and above. Wilson (1930a), working in North India, found in the Kangra valley a heavy incidence among women and girls and quite a considerable incidence in men and boys. Here the average altitude was less than 3,000 feet. In this soil there was a deficiency in lime, phosphorus and magnesia, but the dietary was also deficient in vitamin D.

Srinagar, Kashmir, "where almost all Kashmiri women who have borne children are affected in some degree with the exception of the *manji* (boatman) class" (Vaughan, 1926), lies 5,000 feet above sea level in the Himalayan mountains. Simla is high (7,000-7,500 feet), but Lahore, Delhi, and Amritsar are lower elevations, and Bombay is at sea level. It is likely that the geology has but a very secondary influence, if any. Maxwell and Miles (1925) think it has but little to do with it.

Vaughan (1926) and Stapleton (1925) consider lack of sunlight as being the important factor in the causation of the disease and Vaughan says they are able to successfully treat their cases with sunlight alone.

From the study of all the facts at hand, and especially considering the writer's cases, the most probable cause is a deficiency of vitamin D, either through a lack of sunshine or in the diet. This view is supported by the greater severity of the disease in the winter and early spring months, when the diet in the Chinese cases is limited practically to millet, flours, and a very small amount of poor grade vegetables; when the ultra-violet rays from the sun are much reduced and sometimes eliminated, and when much more time is spent indoors; that all the cases are in people who are on a diet deficient in vitamin D and who live in dark rooms and fail to get sunlight to any extent on the body surface; that those who obtain vitamin D, either in diet or from the sun, though living in conditions similar in every other way to the above, do not develop the disease; that cod liver oil and viosterol will cure the disease, and that the yolk of eggs will stop the progress of milder cases. This theory is also strengthened by the frequency with which the Mohammedan and high caste Hindu women in India get the condition Most of the Moslem women live in strict *purdah*, which prevents the sun's rays from reaching their bodies, and the diets of the higher caste Hindu women are restricted because of religious mandates.

This theory would explain why the village women and the poorer women in China, who spend much time in the fields, have a much lower incidence of osteomalacia than their wealthier city sisters, and why the "untouchable" and poorer women in India, who must get out in the sun to make a living, are not affected to the same extent as are the secluded women in the same section of India.

Treatment

In times past oöphorectomy was reported as giving a large percentage of cures. In the Brethren Hospital in Pingtingchow this operation was not resorted to, as most of the women on whom Caesarean sections were performed were young, and important social questions would have arisen had the ovaries been removed. After Caesarean section, a number of the cases became permanently well, and many of the others were improved, even without removal of the ovaries.

In Europe cod liver oil has been used very much recently in the treatment of osteomalacia. Cod liver oil alone cured the cases of Dalyell and Chick (1921). Butter, margarine, and even olive oil were reported to be effective in lighter cases. Epinephrin and pituitrin were occasionally successful.

In the hospital at Pingtingchow, the treatments used were cod liver oil and calcium lactate, cod liver oil and calcium phosphate, cod liver oil alone, calcium lactate alone, calcium phosphate alone, phosphorus pills alone, and eggs alone. The best results obtained were with cod liver oil and calcium. This series did not show much difference between calcium lactate and calcium phosphate. One-half ounce of cod liver oil with ten grains of calcium lactate or fifteen grains of calcium phosphate were given morning and evening We had three cases under one year's standing on this treatment and at the end of one month all the pains had disappeared in two, and only a little pain in the ribs remained in the third, which later disappeared upon a continuation of the treatment. No patient given calcium lactate and cod liver oil failed to report progress after taking these remedies for two months. On this treatment the tetany disappeared in a few days; the pains were relieved generally after ten days but sometimes not until later. Four eggs daily cleared up a mild case returning with a second pregnancy.

Exposure to sunshine was advised for patients at home, but the hospital did not have quarters secluded enough for extensive sun baths. Since these cases could not be supervised in their homes, sun baths could not be checked. An ultra-violet light was not available.

The treatment at present is cod liver oil with viosterol. Some form of calcium is usually prescribed along with this. Irradiated foods and viosterol can help much by supplying larger quantities of the vitamin without giving excessive quantities of cod liver oil. Blumgart *et al* (1929) emphasize the need for large quanties of vitamin D for maximum improvement. Ultra-violet light and sunshine are of great help. In India, Wilson and Coombes (1930) found cod liver oil, sunshine and some form of vitamin D concentrate effective. Wills (1931) who checked her work with blood chemistry, used cod liver oil and ultra-violet light.

Vaughan (1926) in Kashmir used cod liver oil effectively. Hume and Nirenstein (1921) report the best results from large doses of cod liver oil in treating hunger-osteomalacia in Vienna.

Following the first series of cases studied and treated at Pingtingchow in 1922, arrangements were made with the Department of Obstetrics and Gynecology of the Peking Union Medical College to have work done on the blood chemistry and the calcium metabolism of a group of osteomalacic women. Miles and myself, in 1923, worked on the blood calcium, phosphorus, and CO_2 combining power on nine of the writer's patients, women in the Brethren Hospital at Pingtingchow, on which we obtained results reported by Miles and Feng (1925). The results of the study of the calcium intake and excretion were unsatisfactory and were not published. A smaller group (four women) was selected the next year and Miles, assisted by Feng, studied the blood chemistry and successfully concluded the calcium and phosphorus metabolism studies.

Some of the findings of the study on these two groups are reported here since they give the laboratory evidence for the clinical results the writer obtained on more than 300 cases treated in the hospital and out-patient clinic at Pingtingchow. Tables Nos. I and II show the blood findings in calcium and phosphorus before and after treatment.

TABLE No. I.*

Blood calcium and blood phosphorus of nine osteomalacic women on a fourteen day standard diet before treatment.

Patient No.	Blood Calcium per 100 cc. Serum mg.	Blood Phosphorus per 100 cc. plasma mg.
1	5.2	2.5
2	6.0	1.9
3	7.4	1.8
4	5.6	2.3
5	5.8	3.0
6	7.0	3.8
8	7.0	2.4
9	5.0	2.0
10	5.4	3.2

*Tables Nos. I and II in this paper are rearranged from Miles and Feng, while Tables III to VI are copied directly from their article in the *Journal of Experimental Medicine*, 1925, Vol. 41, p. 137.

In the first series the nine women were on an identical diet. Patients Nos. 1 and 4, treated with 30c.c. of cod liver oil and two grams of calcium lactate daily for fourteen days, showed an increase in blood calcium, respectively of 0.8 and 0.61 mgs. per 100 c.c. of blood serum. Two patients, Nos. 9 and 10, took 30 c.c. of cod liver oil only and had increases in blood calcium of 1.6 mgs. and 2.17 mgs., respectively. Two others, Nos. 6 and 8, were placed on a liberal diet of milk, eggs, and fresh vegetables in addition to the diet common to all. These both lost in blood calcium. Patients Nos. 2 and 3, treated with calcium phosphate, three grams per day for the same length of time, showed 0.2 mg. loss and a 1.3 mgs. gain. Patient No. 5 received two grams of calcium lactate daily. This one had an increase of blood calcium of 1.9 mgs.

TABLE No. II.

Blood calcium and blood phosphorus of nine osteomalacic women after fourteen days treatment.

Patient No.	Blood Calcium per 100 cc. serum mg.	Blood Phosphorus per 100 cc. plasma mg.
1	6.0	2.61
2	5.8	2.9
3	8.7	1.0
4	6.21	3.5
5	7.7	2.3
6	4.6	4.1
8	6.6	3.57
9	6.6	2.95
10	7.57	1.95

The clinical results showed that the four women treated with cod liver oil alone or combined with calcium lactate, were much improved, getting around the ward more easily and being more cheerful. The patients on a liberal diet were much worse, although they were both women with active disease of less than one year's duration. One of these women had a spontaneous abortion of a three months fetus while under observation and failed to cooperate fully. The patients on calcium phosphate were worse, one of them to such an extent that she was hardly able to move about.

TABLE No. III.

Blood calcium and blood phosphorus before treatment in four women with osteomalacia.

Patient No.	Calcium per 100 cc. serum mg.	Phosphorus per 100 cc. plasma mg.
1	7.503	1.83
2	6.395	1.24
3	6.175	2.42
4	5.810	1.55

TABLE No. IV.

Blood calcium and phosphorus after treatment in four women with osteomalacia.

Patient No.	Calcium per 100 cc. serum mg.	Phosphorus per 100 cc. plasma mg.
1	8.62	1.83
2	8.197	2.10
3	9.57	3.02
4	8.58	1.64

Much more interesting were the results on the four women where the calcium balance could be checked. Tables Nos. III and IV show an increase of blood calcium in all four cases after treatment, but by examining Tables Nos. V and VI, one sees that patient No. 4 held a negative calcium balance after treatment, although her blood calcium had increased nearly three mgs. per 100 c.c. of blood serum. This woman did not receive cod liver oil as did the other three, but received instead olive oil, eight c.c. t.i.d., with one gram calcium lactate. In addition to 8 c.c. of cod liver oil t.i.d. for each of the three patients, No. 2 had one gram of calcium lactate and No. 3 had a gram of calcium phosphate added daily. All four patients were on otherwise identical diets. Patient No. 3 had a positive calcium balance before the treatment in this experiment began, but she had been through two series of cod liver oil and calcium treatments of one or more months each on the writer's service in the Brethren Hospital, the last course being completed only about four months before this first blood test. The results on these women would indicate that vitamin D is necessary, or the bone condition will not improve.

Some good work on calcium metabolism was done earlier. McCrudden and Fales (1912) reported a case of osteomalacia in which there was a negative calcium balance in a twelve-day experiment. McCrudden (1906) reported a case in which there was a daily loss of nearly one gm. of CaO.

More recently than the work of Miles, Feng, and myself on the writer's patients, Blumgart, Gargill, and Gilligan (1929) report a case in which the metabolism was carefully studied over a period of ninety-three consecutive days. During one six-day period a low calcium and phosphorus basic diet was given. In the second period 250 c.c. of skimmed boiled milk daily was added. In the third period 50 c.c. of cod liver oil daily was added to the second period diet. In the fourth period eighteen tablets of cod liver oil concentrate were added daily to the third period treatment. In the fifth period ultra-violet light was added to the fourth period treatment, and in the sixth period an increased dosage of ultra-violet light was added to what the patient had received in the fifth period. In the seventh period, increased

TABLE No. V.

Calcium and phosphorus intake and excretion before treatment of four women with osteomalacia.

Patient No.	Calcium Intake gm.	Excretion gm.	Balance 7 Days gm.	Phosphorus Intake gm.	Excretion gm.	Balance, 7 Days gm.
1	3.5630	4.0564	—0.4934	11.4857	8.6445	2.8412
2	3.2285	3.2779	—0.0494	10.0657	6.4382	3.6275
3	3.5630	3.1228	0.4402	11.4857	9.0404	2.4453
4	3.2285	4.0710	—0.8425	10.0657	8.5200	1.5457

TABLE No. VI.

Calcium and phosphorus intake and excretion with balances on four women with osteomalacia, after treatment.

Patient No.	Calcium Intake gm.	Excretion gm.	Balance, 7 Days gm.	Phosphorus Intake gm.	Excretion gm.	Balance, 7 Days gm.
1	3.5811	3.3836	0.1976	11.4983	8.5022	2.9961
2	4.4083	2.7712	1.6371	10.0783	4.7356	5.3427
3	5.4881	2.2011	3.2870	12.3195	6.2155	6.1040
4	4.4083	4.9168	—0.5085	10.0783	7.1730	2.9053

amounts of calcium and phosphorus were added to all the patient had received the period before. It was not until the end of the fourth period that the calcium balance was positive, although the phosphorus was positive in the third period. A calcium balance of more than 8.5 grams was found at the end of the seventh period.

Hughes *et al* (1929a) determined the blood calcium and phosphorus in thirty women, eleven untreated and nineteen undergoing treatment for osteomalacia. The calcium here was much higher than in similar cases in China, but increased on treatment. These same investigators (1929b) found the blood calcium in normal Indians distinctly higher than other investigators have in Europe and America. They attribute this to "excessive solar ultra-violet radiation."

Wills (1931), reporting the blood chemistry on twenty cases, found the blood calcium higher than the Miles series in China but still lower than the normal. This became normal after treatment with cod liver oil and ultra-violet light.

Fetal Rickets

The writer was always struck with the healthiness of the children born of these osteomalacic mothers. There was little or no gross evidence of rickets among these children at birth, and (later) nothing more than a mild rickets, if any, developed. Vaughan (1926) speaks of this same condition in the children of her cases in Kashmir, and Wilson (1931) says, "It is rare for the children of osteomalacic mothers to show signs of rickets until the second year."

More recently, Maxwell (1930) has done work on the histology of bones of infants dying shortly after birth, born of osteomalacic mothers. This histological work, together with X-rays of these fetuses, show that fetal rickets is present.

Maxwell (1930) says, "Two cases of undoubted rickets have been described, both in children born from mothers with prolonged and untreated osteomalacia. Not only does the evidence definitely prove that fetal rickets exists, but it also gives support to the view that osteomalacia and rickets are one and the same disease, producing in the individual with growing bones *rickets* and in the individual with bones of full growth *osteomalacia*."

Osteomalacia in Males

The writer saw one case of osteomalacia in a man seventy years of age in Shansi. He was much deformed and more distinct nodules could be felt on the bones than in any other case the writer has seen. There were no X-ray pictures taken of him. This man was in a very active stage of the disease. This case is reported here for the first time.

Hess (1929), quoting Litamann, finds eleven cases in males out of 131 cases reported in the literature up to 1861. Dalyell and Chick (1921) report a number of males in a group of post-war hunger osteomalacic patients in Central Europe. Hume and Nirenstein (1921) state that 44 per cent of 177 cases of hunger osteomalacia in Vienna were males. Maxwell and Miles (1925) show X-ray pictures of one case of osteomalacia in a male. Wilson (1930a) reports eighteen cases in men and thirty more in boys under seventeen in the Kangra valley, India.

Three factors in the life of women in these two countries make the disease much more common in them than in men:

1. Eating a grade of food inferior to that supplied to men. In China this was true even in the better homes.
2. Living a secluded life—behind doors in dark rooms and, in India, when venturing out, being fully veiled with a heavy cloth.
3. Special strain on the maternal organism in pregnancy and nursing, and to a much less extent in menstruating.

Tetany and Osteomalacia

The majority of the writer's cases of osteomalacia had tetany at one time or another. Many of these complained of tetany symptoms before the regular symptoms of osteomalacia came on, and many of them had tetany when the osteomalacia was at its height. Dalyell and Chick (1921) report tetany in both elderly and adolescent cases with post-war hunger osteomalacia in Central Europe. Maxwell reports it in two girls from an orphanage in China, who, on further study, showed osteomalacic changes in their bones. Scott (1916), Stapleton (1925), Hutchinson and Stapleton (1924), and Wilson (1930b) mention it in connection with the disease in India. The latter found it in both males and females. The idiopathic tetany of Kashmir is often associated with osteomalacia. From all these it appears that tetany is very often associated

with osteomalacia and there must be some relationship between the two conditions.

Prevention

The prevention of the disease is now clear. The writer, in the fall of 1922, put on an extensive educational campaign in the Pingtingchow area in China. Folders, giving the salient points in the etiology and methods of treatment, as we then knew them, were distributed systematically. Better food and more sunshine for all women were urged and especially stressed for pregnant and puerperal women. Egg yolk was emphasized as a part of the dietary. If numbness, which was often the first sign of the disease noticed by the patient, made its appearance, the person was advised to purchase cod liver oil and take one ounce per day. The hospital bought cod liver oil by the barrel and sold it to the people at cost.

This literature was distributed to the city and village officials by men employed by the writer. The officials were very cooperative and passed them down through lesser officials till the information reached the individuals in the homes. In addition, illustrated stereopticon lectures were given in the city and larger market towns as opportunity permitted. The result was that a district with a population of about a million people had an opportunity to know how to prevent the disease.

The results of this educational campaign were very satisfactory. Mission hospitals in the area began to notice after two and three years that there was a falling off in the cases coming for caesarian section. In the early days not nearly all the cases that should have had caesarians arrived at hospitals and some that did were in a dying condition and could not be operated upon. Patients came more as confidence was established. In 1924 there were over twenty normal deliveries and sixteen caesarians on osteomalacic women in the women's section of the hospital at Pingtingchow. In 1929, the last year for which I have any record, there were nine caesarians and forty-four normal deliveries. Had osteomalacia been as prevalent and severe as in 1922, there would have been a substantial increase in caesarians in 1929. Foot binding is now illegal and this likely aids some in the decrease of the disease by making for more out door life for the women.

While in India in 1930-31, the writer tried to visualize prevention of this disease. The early eradication of the disease there will be a more difficult task than in China because of the deeper hold religion has on the Indian. Animal foods are tabooed by the Hindu, and certain other foods by the Mohammedan. Religious beliefs in some groups would prevent the taking of cod liver oil. While the sunlight there is rich in ultra-violet rays, the young women cut themselves off from the light by staying in doors, where the rooms are usually dark, and cover themselves, when they venture out, from head to foot with great, white, heavy cotton gowns, in which two small screened holes allow the woman to see enough to walk. This keeping of *purdah* is characteristic of most Mohammedan women and of many of the higher caste Hindu women. Gradually these barriers will be broken down. In Delhi a drama has been arranged to bring out the causes and prevention of the disease and Wilson (1931) has made an effort to educate the people in better living. The nationalistic movements in both China and India, which are doing much to break down the customs affecting the seclusion of women, should have a beneficial effect on the prevention of the disease.

Summary and Conclusion

China and India are good fields for the study of osteomalacia. Much excellent work has been done in these countries on this disease the last ten years.

Osteomalacia is a disease caused by a deficiency in vitamin D. Those on a diet poor in the vitamin will be protected if they can obtain sun baths. Those without sun can have the deficiency made up by a diet rich in vitamin D.

Deficient calcium in the diet is a contributing factor in some cases in the production of the disease. Lack of exercise figures in the production in so far as it keeps the person in the house. Bound feet figure in the production of the disease by limiting the movements into and in the sunshine. Dark rooms and bad housing influence the disease adversely because of lack of sunlight.

While children born of osteomalacic mothers do not show gross signs of rickets, Maxwell has shown by section of the bones that fetal rickets does exist.

It is a disease largely of the female but is by no means unknown in the male. One case

in a male is reported for the first time in this paper.

Most cases of osteomalacia in China have tetany at sometime. Tetany is much less often associated with the disease in India, but is quite often seen in Kashmir.

Chinese cases have a low blood calcium while Indian cases run higher but are lower in calcium than the average for natives in Northwest India.

The prevention of osteomalacia in China could be accomplished fairly easily by an intensive campaign of education as to its causes. In India it will be a harder and slower process because of the greater seclusion of the women and the religious factor which limits the selection of foods. In both China and India the high degree of illiteracy makes the problem difficult.

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BILATERAL CONGENITAL ANOPHTHALMOS—WITH REPORT OF A CASE.*

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True congenital anophthalmos is usually bilateral and is not a common occurrence. There have been many cases of so-called anophthalmia reported, but these were really cases of diminutive microphthalmia. In these latter cases a careful examination of the orbital fossae will demonstrate at the posterior pole elevated black dots surrounded by normal conjunctiva, and often radiating out from this will be bluish-black lines two or three m.m. long, resembling pigment arrangement of the iris. These are undoubtedly small undeveloped eyeballs. H. R. Wright has reported such a case. In true congenital anophthalmos careful examination of the orbital fossae will not show any vestige of tissue even remotely suggestive of the eye-ball. There is in these cases no

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remnant of embryonal ocular epiblastic tissue. There may be present, however, some development of the ocular muscles, because it has been shown that these muscles may partly develop and their nerve supply develop, although the visual system itself is entirely absent.

It is interesting to speculate as to why cases of anophthalmos occur. We are reasonably sure that they come about because of one or two things: First, a failure of the primary optic vesicle to bud from the thalamencephalon; or second, having budded and begun to develop, it was destroyed by some toxic, infectious, or chemical agent, produced intrauterine, or introduced through the maternal circulation to that of the embryo in its early stage of development. A great deal of experimental work has been done which tends to bear out this latter theory. U. C. Boon, in reporting a case of anophthalmos, quotes Laplat as stating that he (Laplat) has produced anophthalmos or cyclopia in tadpoles by spraying an aqueous solution of some toxic substance on frog eggs during certain stages of their embryonic development. The result of this experiment would tend to give weight to the theory advanced by some that these cases of anophthalmos may be some times due to a gonorrheal infection in the mother which affects the development of the embryo in utero. But to offset this theory, it is interesting to note that the report of Boon's case was one of twin boys. One of these boys was normal in every way except for the anophthalmos. No vestige of eye-ball was found after dissecting out the orbit; neither could any evidence of the ocular muscles be demonstrated.

Stockard has stated that by breeding alcoholized animals through several generations, he was able to produce, among other eye defects, both unilateral and bilateral anophthalmos. He also obtained similar results by treating fish eggs with alcohol during certain stages of their embryonic development, and by treating hen eggs with alcoholic fumes either before or during incubation.

Many of these physical stigmata, which result as a failure of some embryonic development, we often attribute to consanguinity of the parents, inter-marriage among relations, to hereditary influences, to physical defects of the parents, and so on. However, in the majority of cases of anophthalmos on record, the parents were physically and mentally normal, and were not related before marriage. The usual physical and mental stigmata seen in children as the result of marriage between close relations is nearly always absent in cases of anophthalmos. A few cases of polydactylism have been reported as being associated with anophthalmos, but, as a rule, these cases are nearly always entirely normal physically except for the anophthalmos. However, a great many of them show a retarded mental development which becomes more obvious as the child grows older.

Case Report

R. E. W., a male, was born July 6, 1929. His delivery was spontaneous and normal. The birth weight was 6½ pounds. He first came under my observation at the age of eight months. His life from birth until this time had been perfectly uneventful. Except for an occasional coryza, he had been free from any illness. He had been bottle fed, and had made a steady and normal gain in weight.

His parents were normal in every respect, both mentally and physically. They were not related prior to marriage, gave no family history of any mental or physical taint, denied any venereal disease, past or present, and were not addicted to the use of any narcotic or alcohol. Both parents had negative Wassermanns.

The mother had had one miscarriage, at two and one-half months, in her first pregnancy, four and one-half years ago. She had one child, age three years, living and well, and perfectly normal both physically and mentally. A few days after the birth of the baby in this case report, the mother began to suffer with a pain in the right side of her abdomen and back, which continued until August 30th, when she was admitted to the hospital and operated upon by Dr. L. M. Allen. His findings at operation were as follows: There was a large, tender, mass in the right lumbar region extending up from the brim of the pelvis nearly to the lower border of the ribs, and extending medially in the back beyond the midline. This mass was drained by a lumbar incision and twenty-four ounces of pus evacuated. Unfortunately no culture or smear was made. The urinalysis showed both pus and albumin to be present but no casts were found. This was unquestionably a perinephritic abscess.

On March 20, 1930, the mother was again admitted to the hospital complaining of a pain in the right side of the abdomen and pelvis.

At operation Dr. Allen found a cystic right ovary, a right salpingitis, and numerous pelvic adhesions. The adhesions were freed, and the right tube and ovary removed. Smears were made from the tube, and from the cervix and vagina, but were found negative for gonococci. The patient made an uneventful recovery, and at the present time is in good health.

Physical examination of the child was essentially negative except for the absence of eyes. The head was normal in shape and contour. The ears were normal in shape and negative. The hearing was apparently normal. The nose was very broad, the bridge being somewhat depressed, but the nostrils were very large. Internal inspection of the nose was negative. Dentition was delayed, no teeth being present. The frenum of the tongue was over-developed, producing a tongue tie, and beneath the tongue on the floor of the mouth there was a rather marked corrugation of the mucous membrane. The eye-lids were perfectly developed but slightly sunken into the orbital fossae. The palpebral fissures were normal, and the puncta of the lacrimal ducts present. Inspection of the orbital fossae showed no vestige of eye-ball, nor were any ocular muscles felt. Nothing even remotely resembling an eye-ball was present.

Examination of the chest, abdomen, genitalia, extremities, and reflexes, was negative.

The child was very alert mentally, was playful, and would smile when played with.

Apparently this was a case of bilateral congenital anophthalmos in a child who was seemingly normal in every other respect. Whether this anophthalmos was due to a failure of the primary optic vesicle to bud, or whether it was due to a failure of it to develop after having budded I am unable to say. However, it does seem probable to me that this condition was produced by failure of the primary optic vesicle to bud.

Summary

1. True congenital anophthalmos is a rare condition, the majority of cases on record having been cases of diminutive microphthalmia.

2. True congenital anophthalmos is probable due either to a failure of the primary optic vesicle to bud from the thalamencephalon, or, having budded, failed to develop—due to some toxic or infectious agent produced intrauterine or introduced through the maternal circulation to that of the embryo.

3. Experimental work has been done which tends to bear out this toxic theory.

4. A case of true bilateral congenital anophthalmos is reported in a child who is apparently normal in all other respects.

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ELECTRO-SURGERY IN VESICAL NECK OBSTRUCTIONS.*

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For many years it has been the ambition of urologists to relieve vesical neck obstructions by other means than a radical surgical procedure. From present indications, it seems that this dream has been realized to a degree far beyond our expectations. With equipment now available, we feel that it is possible to relieve 90 per cent, or more, of the several types of prostatic obstructions without recourse to prostatectomy. As we become more expert in the technic of operating our electro-surgery equipment, prostatectomy will be reserved for the occasional case in which it is impossible to introduce an instrument, and in those with massive intravesical enlargements of the lateral or median lobe, and the very vascular glands.

It is not my intention to go extensively into the history of the various methods of endourethral surgery which have played such a

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vital part in bringing this work up to the present efficiency of equipment and technic. A complete resumé has been outlined by so many able writers that it hardly seems necessary to repeat; however, a few remarks in regard to several of our pioneers in this work would not be out of place at this moment.

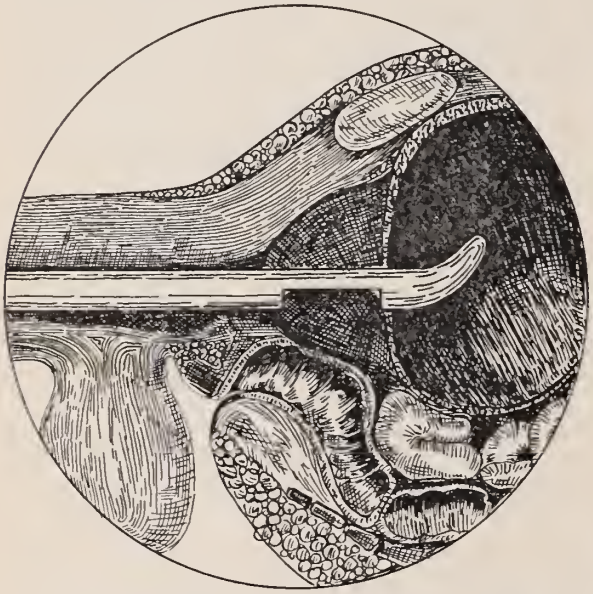

Fig. 1.—Sagittal section showing Stern-Davis resectoscope in place with prostatic tissue engaged in fenestra, preparatory to cutting with loop. The necessary number of sections are removed to secure a wide open tunnel from the trigone apex to the verumontanum.

To Hugh H. Young, who is often referred to as the father of urology in this country, goes great credit for visualizing and perfecting a tubular punch, in 1913, to meet a limited requirement in certain types of median bar and contractures. On account of no provision for adequate control of hemorrhage, this instrument was never popularized.

In 1919, John R. Caulk modified the Young punch by adding a circular cautery blade, and to Caulk we are greatly indebted for stimulating the interest of urologists in the field of endo-urethral surgery. His continual hammering of a sound principle, in the face of criticism and sometimes fire from many sources, was a strong factor in hastening the apparent perfection of the present day equipment and the climbing aboard of the band wagon by urologists everywhere.

In the field of prostatic resection, too much credit cannot be given to T. M. Davis for his mechanical and electrical ingenuity, along with an unlimited patience, in perfecting the Stern resectoscope and assembling a cutting-coagulation unit to meet requirements which had previously seemed impossible.

Several years ago my interest in endo-urethral surgery was aroused by Caulk, when he introduced the cautery punch which was primarily intended to relieve vesical neck obstructions due to median lobe or bars and fibrous contractures. Later he extended the use of this instrument to lateral lobe hypertrophies, and at present reports a satisfactory relief of all types of obstruction in 85 per cent of cases. Dr. Caulk, of course, is an expert, but it is to be doubted if other operators could claim such a high per cent of clinical cures. My experience with this instrument has been limited to a relatively small series of selected cases with end results that were extremely

Fig. 2.—Sagittal section demonstrating the McCarthy electrotome in place for resection. Note the cutting loop projecting from the sheath of the instrument. The desired amount of tissue can be removed by repeated excursions of the loop.

satisfactory in the vast majority, particularly in the well advanced carcinomas in which conservative surgery is essential.

For the past six months, every case of prostatic obstruction which has come under our care and submitted to surgery has been operated with the Stern-Davis resectoscope, and a Davis-Bovie cutting and coagulating unit which appeals to me as a most practical and versatile outfit for this work.

Recently McCarthy has perfected a visual prostatic electrotome which is in many ways superior to the Stern resectoscope. It is not only less difficult to operate, but somewhat larger sections are removed at each excursion

of the loop, thereby lessening the operating time consumed.

Prostatic resection is an outstanding achievement in the steady march of progress in urological surgery of the present day. It not only practically eliminates a hazardous major surgical procedure in the old man, with a multitude of infirmities, who is approaching the sunset of life, but offers relief to the large number of middle-aged who are in the incipient stage of prostatism and are rightfully unwilling to undergo the ordeal of the mutilating operation of a total prostatectomy and a loss of sexual power.

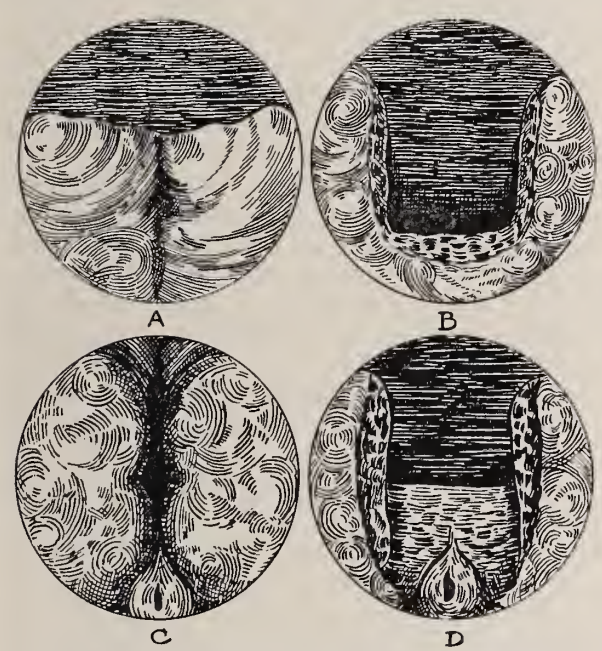

Fig. 3.—(A) Large median lobe. (B) Median lobe tunnelled through. (C) Diagram illustrating hypertrophy of lateral lobes with verumontanum in foreground. (D) Excised intraurethral projection of lobes giving a wide open channel from the verumontanum to the apex of the trigone.

One should not get the impression from all that has been said and written that endourethral surgery is a very minor procedure that can be undertaken without due consideration of many factors, particularly in reference to the proper preliminary treatment which is of paramount importance, just as it is in the preparation for a prostatectomy. Each candidate for the work should be given every consideration in respect to the circulatory system, gradual decompression of the over-distended bladder, and the renal function. Although many of these cases do not reach a degree of improvement which would make a prostatectomy reasonably safe, a resection can be carried out with a minimum degree of risk.

As a minute technic of this operation is chiefly of practical interest to the resectionist, only a brief outline of the important points will be given in connection with slides which will be thrown on the screen preceding a demonstration of the resectoscope loop and the cutting-coagulation unit. This will give a fairly comprehensive conception of the mechanism in prostatism, as well as the operation itself.

Following the excision of the required amount of tissue to give a wide open tunnel from the verumontanum to the trigone, a soft catheter is strapped in the bladder for continuous drainage over a period of three or four days. On removal of the catheter, the patient usually voids a full, forceful stream with surprisingly little discomfort. The average postoperative stay in the hospital is about a week, with exceptions, of course, in the occasional case.

As time goes on, this recent advance in prostatic surgery will become increasingly popular, not only from the economic standpoint, but it will be generally realized that a maximum relief of symptoms can be obtained by substituting a relatively safe procedure for the dreaded ordeal of a total prostatectomy.

Fig. 4.—Diagram illustrating numerous sections of prostatic tissue removed with the radio cutting loop. The amount of tissue resected varies in each individual case.

Prostatic resection is a sane and satisfactory operation, with possibilities of accomplishing all that is desired in establishing a free outlet of the retained urine.

We should not remove a prostate simply because it is enlarged, but excise the obstructing portion, and the tissue remaining will either undergo a shrinkage or remain harmless.

In conclusion, I am taking the liberty of quoting from Professor Luys' article on Forage de la Prostate, as follows: "When a mountain interferes with communication between two points, the communication is established, not by removing the whole mountain, but by digging through it a tunnel sufficient to care for the traffic."

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COMMENTS ON THE DIFFERENTIAL DIAGNOSES OF PSYCHONEUROSES AND PSYCHOSES.*

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There is a considerable diversity of opinion as to whether the relationship between psychoneuroses and psychoses is merely one of quantitative expressions or one in which there are demonstrable, fundamental differences. In the first place, we all approach such a problem in a prejudiced way, our minds being already made up on the basis of our personal experiences as clinical psychiatrists with patients. In the second place, the various writings on the neuroses and psychoses, particularly those in the foreign literature, are misleading in many respects, as their expressions in terms of classification do not correspond with the Kraepelinian viewpoint, nor with other groupings in the English speaking clinics. Those who are engaged in the practice of the Freudian type of psychology express all abnormal mental reactions in the term "neurosis," the milder reactions being classified by the term "transference neurosis" and the frank psychoses such as paranoia, dementia precox, manic depressive reactions, etc., as "narcissistic neuroses," but, not withstanding, the word "psychosis" is used here and there throughout the same type of literature.

One attitude towards this question is that there is no definition of the psychoses that marks them off from the neuroses and that they are only distinguished by these two terms for practical purposes. These observers contend that it is a matter of quantity of expression or of degree, rather than of kind, and they refuse to recognize any clear lines of separation between psychoneuroses, neuroses and psychoses. There is a contrary attitude and also one that has many adherents, i. e., that there is a definite distinction between these groups and that in a fundamentalistic way one never precedes or develops into the other. This attitude must imply that there are criteria which are not recognized by the first mentioned observers, but which are capable of forming a more sharply delineated concept of these disorders.

The basis usually given for the first impression, that is, that these conditions represent quantitative expressions, is usually one of three possible attitudes; first, is the prognostic attitude of differentiation, which might be said to be a more definitely prejudiced viewpoint. One is often quite surprised to note that in some clinics the favorable or unfavorable outcome of the mental disorder determines the taxonomic differentiation of neuroses from psychoses or serves to indicate a diagnosis within one group or the other. The second reason, and one quite often encountered, is developed from the opinion based on ordinary clinical experience and shows what I call the "clinical quantitative degree" viewpoint. The opinions based on personal experience are commonly summed up by some such statement as "I have seen many cases do this (meaning beginning as a psychoneurosis and gradually develop into a psychosis), but, of course, I have not made studies other than the ordinary clinical record and my personal observation." In this respect it will too often be found that the observations have been haphazard or uncontrolled; daily, weekly, monthly or hourly observations without any detailed studies of the deeper mechanisms involved. The third attitude is what I would call the "mechanistic-quantitative viewpoint" held by some who see strictly what they argue to be the fundamentals, the argument being that mental mechanisms are the same throughout mental life. They are present in the normal or average and are exaggerated in the neuroses and more so in the psychoses; therefore, the patient, having difficulty in adjusting at the normal adult level, takes a simpler attitude by regression and, if necessary, a still deeper flight into the psychosis, to find a more comfortable place in the scheme of things.

The basis for the argument that there are

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fundamental differences between the neuroses and the psychoses depends chiefly upon matters revealed by the psychoanalytic technique. These observers hold that repression is a more involved matter than mere quantity and that it takes place to basic organized fixation points in the development, which fixation points differ in the psychoses from those found in the neuroses and that the neurosis is a difficulty between the instinctive drives and the super-ego, while the psychosis is in the realm of the ego and the ideal of ego. In schizophrenia there is a destruction of the ideal of ego, which is also true of the paranoid sub-group, thus constituting a disease of the id. In the manic depressive psychosis the relationship between the ego and the ideal ego is changed, while the organic determinants are diseases of the ego construction. Thus, the mechanisms in the psychoses are different from those in the anxiety neurosis, where the regression is to the edipus relationships or in the compulsion obsessional neurosis, where the regression is to the homosexual anal level and are thus never quite so deeply seated as in the so-called narcissistic neuroses or psychoses where the regression goes to a deeply infantile level, or even beyond this into the earliest somatic components.

In the so-called character formation of the average person there is an integration with the balance well developed in the regression and compensation mechanisms, while in the neurotic character there is an absorption of the unconverted instincts into the ego. In the neurosis the instinctive drives are not acceptable to the super-ego and thus may become dissociated, while in the psychosis there is definite dissociation with projection of the elements into the outside world.

If one approaches this question from the purely biological or psychobiological standpoint, one has to admit that nothing is merely quantitative in biologic mechanisms and so it is necessary to recognize the basic importance of what is known as organization in structure and function. There are many degrees of this organization, but it is not only a matter of degree, or of simple summation; as when any group of organized units express themselves at different levels; there are fundamental differences in these expressions, not only in their patterns, but also in the basic principles themselves. In dealing with such a question we have to constantly emphasize the matter of integration at different levels, the basic reactive possibilities and probabilities have to be considered as being different or changed. We can never depend upon the secondary or surface expressions, excepting in a rough indicative way, to lead us in making a decision concerning what is going on beneath the surface. A reaction which is homogeneous on the surface may be heterogeneous fundamentally and vice versa. It is of some importance in considering this impression to recognize the fact that all those who are working intensely in psychoanalysis agree that there are fundamental differences between the neuroses and psychoses and that these differences depend upon different sets or groups of integrated factors.

A comprehensive inclusive definition of the abnormal personality reactions would be difficult to formulate because of the extensive overlapping of various characteristics which are also somewhat in common with disorders which are not essentially either psychoneurotic or psychotic in nature, but it is possible to make a delineation of this field which will be understandable, at least from a practical standpoint. At the present time we may concede that human beings on the basis of development, repression and regression are divisible according to the main expressions of their personality, dependent upon these mechanisms into four main groups, (a) the normal or average character, (b) the neurotic character (Alexander) or idiosyncratic personality (Healy), (c) the neurotic personality or unstable egocentric personality (Healy), (d) the psychotic personality or psychotoid personality (Healy). In differentiating an individual into one of these four groups one must keep in mind the concepts of repression and regression, as it is possible only on the basis of these to make an understandable description of what we mean by the term personality.

It is taken for granted that all individuals, at least in the present day and age, are subject to somewhat similar varieties of training which is in keeping with the laws of society and that this training at times is antagonistic to original organic biologic laws of growth, development and reproduction. The process of repression begins early and we may consider an individual as normal, if through this

process of repression and adjustment he is able to make the proper sublimation or use of his repressed or partly inhibited original, instinctive tendencies for the good of himself and others. If he, in his life situation, is sufficiently successful in his adjustment to enable him to conform with the laws of society on the one hand, and to maintain a free conscience on the other, he could be considered as a normal person.

There are certain other individuals, whose numbers are legion, who are looked upon by their fellow beings as odd, queer, eccentric personalities who do not mix well in the ordinary social activities, but who do conform to the laws of their community on the one hand, and seem to be free from mental conflicts on the other. The difference in character is sufficient to invite various facetious and often derogatory remarks from others, but the odd individual himself really has little or no insight into his condition and feels that he is normal or at least only a little queer. These individuals have been called by various authors the "neurotic character type," which is to say that the early repressions were not adjusted at the average normal level, but that there were neurotic tendencies which became, so to speak, reabsorbed into the personality and there structuralized to the extent that the neurotic trait became a rigid part of the character, that is, it was accepted by the ego as normal and functions in this manner throughout a lifetime. Such a personality practically never shows outstanding neurotic symptoms as such and there is no conclusive evidence that they are prone to active mental conflicts or what is known as a psychoneurosis. The psychoneurotic individual is one in whom the repressions have failed in part, to the extent that the early instinctive tendencies (destructive and reproductive) are released or maintained in an unsuitable state which is not accepted by the ego as part of its own structure and thus a conflict is created between the ego and the id to the extent that the individual is perpetually or periodically in an uncomfortable state of mind at the emotional level. The struggle is an aim to maintain a certain amount of normalcy and to keep from society the fact that what is understood as anti-social mechanisms are in force. These mechanisms representing socially unacceptable cravings come out in a distorted manner in the form of symptomatic acts, phantasy formations and a horde of different physical symptoms, the real fundamental nature of which is unconscious.

The psychotic individual is one in whom some repressions have entirely failed to the extent that the individual is expressing himself in part purely at an infantile or "perverted level" and in whom regression has taken place to an earlier state of behavior which is much more simple in its adjustment than growth and progression at the high adult environmental level. From time to time the psychotic person through re-repression, which may be brought about in more than one way, is able to recover his former adjustment and take his place in society. Clinically, there is usually no difficulty in differentiating an outspoken or fully developed psychosis from a psychoneurosis, but at times the differentiation of a psychoneurosis from a "neurosis like" condition of more definite physical significance, or from a beginning, a mild or an atypical case of dementia precox, is no easy matter, and not seldom is it necessary to await further developments in a given case before venturing a diagnostic opinion. However, there are certain general helps in differentiation which, if carefully evaluated, tend to point in the right direction.

In those cases (and they are numerous) either of psychoneurosis or of psychosis complicated or characterized by leading physical symptoms, the physician's diagnostic ability is challenged at once, and, as before mentioned, it is frequently very difficult to differentiate clinically certain mental manifestations from those symptoms commonly encountered in internal diseases, since the psychoneurosis, particularly the symptoms, may not always be entirely at the emotional behavior level of expression, but may, as far as the complaint itself is concerned, consist almost wholly of physical expressions. Therefore, the following points should be clearly in mind during the examination of a given case:

1. The temperamental make-up of the person, with particular attention to his manner of reacting to previous illnesses and to the past vicissitudes of life.

2. The mental attitude of the patient toward his disease, and also the attitudes of the relatives toward his condition. Does he seem to be gaining a lot by being ill?

3. The particular environmental setting in which the disorder began.

4. The type of history of the illness, as to whether it conforms with the classical descriptions of physical diseases. Are there too numerous, unaccountable deviations from the picture?

5. The nature of the physical signs and symptoms on examination. An evaluation must be made of the relevancy of the physical signs (if present) to the actual complaints of the patient, e. g., insomnia and fatigue must be considered from several standpoints, as must also tremors, tics, muscular weakness, paralysis, headaches, tachycardia, gastric symptoms, diarrhea, etc.

After the early "mental case" is so diagnosed, the physician must try to decide whether it is a psychoneurosis or a psychosis in order to direct in a general way his advisory capacity to the benefit of the patient and of the community. The finer differentiation into varieties or forms of these disorders, matters of benignancy and malignancy and courses of treatment, require the attention of one who has specialized or has had an extensive experience in mental conditions. But in making the first differentiation the general physician and specialist alike have to consider the general mental character of the patient, the type of personal history, the interpersonal relationships, the environmental (personal, economic, hygienic, occupational, etc.) setting of the disorder, the actual personal problems involved, the patient's mental attitude toward his condition, and the manners or ways in which his regressive or peculiar behavior take place.

The following table constructed of briefly described comparisons and contrasts of some of the mental symptoms in the two general types of disorder may help in doubtful cases, particularly when the psychosis is of dementia precox import, as it is in this particular problem that one is most frequently confronted with diagnostic difficulties.

Psychoneurosis	Dementia Precox
1. Personality relatively intact.	1. Transformations of personality common.
2. Primary disorder in "free floating" affect or anxiety. Emotions quantitative exaggerations of normal.	2. Primary disorders in *association* of ideas and *affectivity* disjunctions. Qualitative changes in emotional expressions. Emotional distortions.
3. Anxiety always present in some form—emotional uneasiness—feelings of insecurity and fear—no real associated delusions or hallucinations.	3. Anxiety present at times, but often disjuncted from reality or falsely interpreted—may be connected with tormenting self reproaches and self-accusatory delusions—sense of guilt more consuming—anxiety often caused by hallucinations.
4. Physical discomforts—sensations — pains — constrictions—rationally but incorrectly explained. In both types of disorder physical conversions or physical symbolism occurs at that point where there is some feeling of strain and	4. Hypochondriasis more dominant and bizarre—often explained in delusionary manner. where there has been personally a physical disease or some other somatic preparedness—"ein somatisches Entgegenkommen" (Bleuler).
5. Dissociation—practically none except in hysteriform components—some benign feelings of unreality or delusions against others.	5. More marked loss of borderline between reality and unreality—more definite feelings and convictions of unreality in self and outside world.
6. Projection elements or delusions against others mild—and in connection with more or less real misunderstandings.	6. Projection with lack of insight more active. Deeper seated and often absurd delusions against others.
7. Obessive thoughts—invading ideas displacing and contradicting the usual preoccupations of the subject—produces "intellectual vertigo" (fear of loss of all reason—differentiate from physical vertigo which gives the impression of imminent death)—Feelings of compulsion to do things.	7. Obessive thoughts more apt to "be shared by others" or controlled by outside forces (difference in insight)—indicates loss of borderline between reality and unreality—feelings of "mind being read" and of "thoughts known to others."
8. Hallucinations rare. "Expectation," hallucinations or rather "illusion" may be more active than normal.	8. Hallucinations may or may not be present, but when present and associated with mystical interpretations, feelings of mind reading, etc., they at once indicate the diagnosis—(particularly if a comparatively new development).
9. Psycholeptic attack—seen in psychasthenia. Severe disorganizing, confusing anxiety attacks may be followed by some depression.	9. Accompanied by bizarre ideas, vagueness of thought, indecisiveness, somatic delusions, and paranoid projections—followed by deep depression (agitated form) and suicidal reactions.

10. Suicidal reactions more apt to be "gestures" to gain attention.
11. Intellectual disorder—Disturbance of mental content and lack of concentration because of divided attention (one part on personal troubles—other on thing at hand)—causing temporary disturbance.
12. Insight retained.
13. Retention of ideal of ego—Retains the point of view of society and of previous training
14. Progression to states of more complete invalidism.

10. Suicide more apt to be genuine and successful.
11. Intellectual disjunction invariably present because of deeper split in personality—with depersonalization—Some things done well—memory disturbance as such varies from none to complete loss.
12. Insight usually impaired.
13. Beginning loss or disturbances in ideal of ego. Loss of social sense and habits.
14. Progression of mental oddities by increase and shifts in the picture. Finally deep regression to "vegetative" level.

In studying the personal history of a patient we must keep in mind that the upsetting things in life do not consist only of such gross events as assault, rape, breach of promise, sudden dangers to life and the death of beloved persons, but a person is constantly bombarded with numberless daily problems, having a cumulative effect, including the ever-present one of sex, and moreover there are fights and struggles against the hostility of others and various competitive situations in gaining a livelihood as well as conflicts between loves and hates within themselves. Under the existing conditions it is a wonder that more people do not develop a permanent serious mental disorder, but after all the human mind is a very adaptable thing and usually adjusts itself unless there are deeply seated handicaps in the form of predisposing fixation points.

Whenever there has been an active conflict between morality and an instinctive drive, the result is some expression of anxiety, one reason for which may be of anatomical significance, as there is a close structural proximity between the fear and sex centers in the mid-brain. Those who have anatomical leanings and who see in the mental disorders released by organic brain diseases an indication that all abnormal mental states must be caused by brain lesions which are still eluding science, would do well to recognize that brain lesions produce no new mental material, but they make the individual live at a more primitive or simple level, the special aspects of which are determined by what has gone on before from the beginning of his life.

Any organic disease of the body as well as a psychoneurosis may serve to place the individual in a position commanding more love and attention from his family or associates. He again becomes the center of attention, and, moreover, the sufferings from the disease satisfies any need for punishment for self evaluated wrong doings. When we look about us as physicians we find ourselves in a very neurotic world, from which we must hope to emerge with a better understanding of life and its values.

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VOMITING IN INFANCY AND CHILDHOOD.*

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Vomiting is perhaps the most frequent symptom of disease in infancy and childhood, and may indicate anything from slight over-filling of the stomach to the gravest condition, such as bowel obstruction, central nervous disease, or serious toxemia. "Owing to the shape and position of the stomach in infants it occurs with great facility" (Holt). The slightest local or systemic disturbance is sufficient to produce an attack; in fact, there are few disorders of any type occurring at this period in which vomiting does not occur at some stage of its course. It is often the first symptom for which relief is sought, and may be the source of much anxious concern on the part of the parents, and may even endanger the life of the child.

Disturbances from improper feeding is the

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generally recognized causative factor in the great majority of cases, and a history of some slight dietetic error can usually be obtained in almost any case. It is, therefore, important to constantly keep in mind some of the more serious uncommon causes as well, or we may fail in making a correct diagnosis or delay it until the chances for recovery have been seriously jeopardized. This is especially true of those conditions associated with vomiting, requiring surgical means for relief, when sometimes a few hours delay in diagnosis may rob the little patient of its chances for recovery. I shall, therefore, first attempt to bring to your attention a brief clinical picture of some of the serious conditions in which vomiting may be the first and chief evidence of disease, all of which merit thoughtful consideration whenever this troublesome symptom is present.

Intussusception

This condition is characterized by a sudden onset of vomiting and paroxysmal pain. The history is generally that of a previously healthy child, usually breast fed, more often male than female, the ratio being about two to one. The most common age is from six to twelve months (about 70 per cent occur in the first year), although it may occur at any age and has been seen in a child as young as five weeks. There is great prostration; the temperature is usually normal, or may be subnormal in the early stage. There may be one or two fecal stools at first, but this is followed by frequent bloody stools. A tumor is usually palpable within a few hours after the initial onset, and is most frequently felt in the epigastrium or left iliac region. The size of the mass will vary with the degree of invagination. The usual textbook descriptive term "sausage-shaped" is accurate when the invagination is large. It can often be felt per rectum and a rectal examination should always be made, for, even when the tumor is not palpable, withdrawal of the examining finger is almost constantly followed by a bloody discharge, which is a symptom of great value. The chief diagnostic symptoms are the vomiting of sudden onset, with severe paroxysmal pain, great prostration, bloody stools, tenesmus and palpable abdominal mass. If this picture is kept in mind, one would rarely confuse it with any other condition.

The prognosis is entirely dependent upon the time of operation, increasing in gravity with each hour's duration of the disease. The treatment is essentially surgical. Such measures as the inflation of the intestine with air, or the injection of water into the bowels are too uncertain to justify a trial if competent surgical aid is available. While a relatively safe procedure during the first few hours, there is always a possibility of an incomplete reduction even when it appears successful, and the delay incident to the trial of such a procedure seriously impairs the child's chances of recovery, while the prostration is also increased by the ineffectual enemas.

Pyloric Stenosis

Vomiting is a constant symptom in this disease, and is usually seen in the first two months of life—more often in the first two or three weeks. It may at first be only occasional, but as a rule rapidly becomes habitual, occurring after each feeding. It is almost invariably projectile in type, being forcible from the very beginning. It has no relation to the character of feeding. A large proportion of cases is seen in the breast fed infant. Fully four-fifths of the cases occur in male infants, there seemingly being no explanation for this fact. Sometimes two or three feedings may be taken before vomiting occurs and then the whole amount is vomited at once, but this is rare. Visible peristalsis is almost a constant symptom and is best observed immediately after a feeding. A ball-like tumor about two inches in diameter appears just below the ribs on the left side, and gradually moves to the right, usually disappearing just beyond the median line, while a second ball-like wave is frequently seen beginning on the left before the one disappears on the right. A small tumor is palpable in a majority of cases, but it often requires a great deal of patience and perseverance on the part of the examiner to elicit this symptom, as it is sometimes only felt during active peristalsis, and may be located behind the liver and not palpable at all. The region in which it is most often felt is at a point just about two inches below the free border of the ribs and just inside the right mammary line. This usually corresponds to the point of disappearance of the peristaltic waves. The size is about one-half of an inch in diameter and one inch long. There is obstinate constipation, and, if the obstruction is complete, the stools resemble meconium. There

is a rapidly progressive loss of weight. It is important to recognize the cause for this type of vomiting as early as possible, as the loss of weight soon becomes a serious matter, and unless proper treatment is instituted before one-fourth of the body weight is lost, the condition becomes critical. The characteristic symptoms are vomiting of a projectile type, occurring in the first two months of life, visible peristaltic wave, palpable tumor, constipation and a rapid loss of weight. Too much time should not be consumed in medical treatment, such as thick cereal feedings, gavage, and the administration of atropine, but unless the symptoms are urgent and the loss of weight very rapid, one is perhaps justified in giving such means a very brief trial. However unless almost immediate benefits are derived from such treatment, surgical intervention should be insisted upon, as it is a simple and relatively safe procedure in the hands of a competent surgeon and offers the best prospect for a permanent cure if done at the proper time.

Pylorospasm

This condition may present much the same picture and is often hard to differentiate from a hypertrophic pyloric stenosis but the symptoms are not as pronounced. There is no palpable tumor and food elements are usually found in the stools. The administration of atropine will relieve the symptoms in the majority of cases.

Appendicitis

This is considered a relatively rare disease in infancy and early childhood by many observers. On the other hand, Sheffield makes the following statement: "In view of the frequency in which the vermiform process is found implicated in the course of infantile gastro-intestinal disease and its tendency by its relatively greater length and width to favor lodgment of foreign bodies, there is ample reason for the belief that as a whole appendicitis is as common in children as in adults." My own observation gives the impression that it does occur less frequently in infants and young children than in older children and adults. However, it unquestionably does occur with sufficient frequency to merit serious consideration in the vomiting child when no other cause is obvious, and it is probably often erroneously diagnosed or ascribed to such conditions as food disturbances, cyclic vomiting, and the like. The diagnosis is much more difficult in infants and young children than in the adult. Vomiting is a constant symptom even in the moderately severe cases. Localized pain and muscle rigidity is more difficult to elicit than in older children or adults, and when tenderness can be localized it is often at a much higher point in the abdomen than is usual for older children and adults and may simulate gall-bladder infection or pneumonia. The pain is usually accentuated by forcibly straightening the right leg, and there is often a tendency to hold the leg and thigh in a flexed position. The blood picture is of great value and should never be omitted. A rectal examination will also aid in the diagnosis. In cases with recurrent attacks an X-ray examination may yield valuable information and is of great value in the differentiation from pneumonia. A careful analysis of the symptoms is necessary, but with the proper interpretation of the physical and laboratory findings a correct diagnosis can be made in the majority of cases.

Brain Tumors

Vomiting may be a troublesome symptom in tumor of the brain. When it occurs, it is forcible in character, often without nausea, and has no relation to feeding time. Other associated evidences of intracranial pressure are present, such as headaches, optic neuritis, sometimes general convulsion, mental dullness, giddiness, and nystagmus.

Brain Abscess

Brain abscess may present very much the same picture, and vomiting may be a troublesome symptom. In addition to the symptoms mentioned above, there is usually a history of chronic aural disease preceding the attack.

Hydrocephalus

This condition may produce the same type of vomiting, but other evidences of the disease, such as abnormal increase in the circumference of head and bulging of fontanels usually develops before the vomiting begins.

Acidosis

Acidosis is more often a result of vomiting than a cause. However, vomiting is so often such a serious problem to deal with in the management of acidosis that it is probably not out of place to consider it in this connection. The term is often loosely applied to all cases in

which there is an acetonuria. More properly the term should be restricted to those cases in which there is a shifting of the acid-base balance of the body definitely toward the acid side. Vanslyke suggests that the extremes of reaction in the human blood compatible with life lie approximately between ph_7 and $ph_{7.8}$ —the normal range being within limits no greater than $ph_{7.3}$ and $ph_{7.5}$ or possibly somewhat narrower,—so that normally the blood is only slightly alkaline, so far as its reaction is concerned, but it has the power of neutralizing quite a large amount of strong acid before its reaction is changed. Hyperpnea, or air hunger characterized by deep pauseless respiration with moderate increase in rate, is the only reliable and pathognomonic clinical symptom. The lips and cheeks are often a very bright cherry red, but this sign may be absent. A fruity odor of the breath is often present and is of some value in diagnosis. Acetonuria may or may not be present, and is often found in other conditions than a true acidosis. The above mentioned symptoms, when carefully analyzed in connection with the history of the case, will usually lead to a proper diagnosis. The diagnosis may be further confirmed by other laboratory tests, such as the determination of carbon dioxide tension in the alveolar air, and a determination of the bicarbonate reserve of the plasma and tolerance for alkali.

In the treatment for acidosis, the chief points that have to be considered are (1) the underlying causes, (2) the prevention of a further production of more acids, (3) replenishing the alkali reserve, and (4) the elimination of acids and their salts. Because of reduced blood volume which is present in most cases, the administration of large quantities of water is indicated—by mouth if it can be retained. If this is not possible, Ringer's solution or saline should be given sub-cutaneously or intraperitoneally. The administration of glucose is indicated in all cases of non-diabetic acetone body acidosis. From two to four ounces of 5 per cent solution can be given by rectum at four hour intervals, or a 5-10 per cent solution by mouth in quantities dependent upon the age, weight and tolerance of the child, or it may be given by way of the nasal passages at a slow rate by means of a catheter, or intravenuously in varying strength, the volume by this route not to exceed one-fiftieth of the body weight at any injection. Insulin glucose therapy may augment the utilization of glucose in the body. One unit of insulin will cause the utilization of from two to three grams of glucose, but it must be borne in mind that there is already a hypoglycaemia present in the majority of cases, so that an amount of glucose in excess of the quantity utilized by the insulin must always be given. The administration of alkali should probably occupy a secondary place in the treatment of acidosis. Sodium bicarbonate may be administered in 15 to 30 grain doses by mouth every four hours, or intravenuously in from two to four per cent solution. Blood transfusions are indicated in some of the severe cases. Carbohydrates should be administered freely by mouth in the form of cereals, to which sugar, maple syrup, karo, or honey has been added; also fruit juices and malted milk are often well tolerated.

Cyclic Vomiting

This condition was formerly considered a type of acidosis; more recent studies have, however, shown that while the presence in the urine of acetone, diacetic acid, and oxybutyric acid are almost constant findings and occur early in the attack, the point is emphasized that acetonuria is not the same as acidosis, and that true acidosis is rare in cyclic vomiting, but may occur in the late forms. True cyclic vomiting is characterized by periodic attacks of vomiting which occur at regular or irregular intervals of weeks or months, apparently without adequate exciting cause. The usual duration of the attack is two or three days, when it ceases spontaneously. The age at which the first attack is more commonly seen is from two to four years, but may occur in younger children. The majority of cases are delicate children of nervous temperament, and usually there is a neurotic family history, although it may occasionally be seen in the robust type. The attacks are often preceded by a prodromal period of a day or two, characterized by langour, anorexia, dullness, and a sense of epigastric discomfort. The vomiting begins suddenly, is often repeated every half hour to hour for two or three days, and is immediately excited by taking food. The vomited matter consists of frothy mucus which is often streaked with blood. Signs of exhaustion are marked. There is rarely any abdominal distention. The periodicity of the attacks, occurring in the delicate neurotic child without

any definite cause, is the distinguishing feature. The condition is apparently uninfluenced by any treatment. Should acidosis develop, appropriate methods for combating that complication should be resorted to. Between the attacks avoidance of over-feeding is important. The alkaline treatment over a long period of time has been advocated, but is of doubtful value.

Habit Vomiting or Rumination

This is not an infrequent type of chronic vomiting in the neurotic child. It is more frequently seen in girls than in boys, and usually begins in the first six months. The child often has a neurotic family history, is usually irritable, and cries long and hard from the slightest discomfort. This form of vomiting most frequently begins a few minutes after food is taken, but in rare cases may be delayed for several hours. If the child is carefully observed, it will be noted that the condition is frequently preceded by sucking of fingers. Food is brought up into the pahrynx, and the tongue is moved backward and forward with a grinding movement of the lower jaw in an apparent attempt at swallowing; this is usually accompanied by a gurgling sound, which is soon followed by regurgitation of large amounts of food. The condition is often serious and may lead to grave symptoms. The characteristic features are the habitual movements of the lower jaw, to and fro movements of the tongue, apparent attempt to swallow after feeding, the regurgitant type of vomiting (it is never forcible), and a neurotic history. An exhaustive search should always be made for other evidences of disease before a positive diagnosis is made.

Treatment: Taylor and Morse report good results from tying up the lower jaw; others report good results from tying the hands so that the fingers cannot be placed in the mouth, attracting the attention of the baby immediately after nursing by ringing a bell, or by a rattler or even the use of a pacifier as a means of a diversion. The semi-erect position after feeding is likewise said to produce good results. Often the use of thick cereal feedings will promptly control the vomiting when the thinner liquids cannot be retained.

Dentition

The tendency which was prevalent for such a long period to attribute so many of the gastro-intestinal upsets occurring between the ages of six months and two years to "teething" has greatly diminished. As a matter of fact, active local manifestations of dentition can practically always be seen in children of this age, and the existence is merely a coincidence in the large majority of cases. It cannot, however, be denied that attacks of indigestion with vomiting are more easily excited during a period of active dentition, and this is especially true in the rachitic, neurotic or otherwise delicate child.

Acute Infections

Many of the acute infectious diseases are ushered in with an attack of vomiting as the first symptom. This is notably true of scarlet fever and acute infections of the respiratory tract, such as influenza and pneumonia. If a careful examination is made other evidences of the infection are practically always present. Pyuria is also a frequent cause of vomiting in children. In certain types of pneumonia the gastro-intestinal symptoms are the most prominent features in the beginning of the infection and often the only evidence of disease present. The vomiting may be a serious complication throughout the entire course of the disease. Goodman, of Lenox Hill Hospitl, New York, has found that many of the pneumonias in children are complicated with a mild pneumonococcic peritonitis which usually subsides with the clearing up of the pulmonary lesion. This complication obscures the pulmonary picture by its effect on the respiratory function, and makes the diagnosis more difficult. The X-ray is of great aid in the diagnosis of these types of pneumonia.

Vomiting in the New-Born

Vomiting in the new-born may be due to gastro-intestinal irritation from swallowing maternal discharges. The vomiting usually comes on in the first twelve hours of life and may be slight or severe. Lavage with normal saline or 2 per cent solution of sodium bicarbonate is the most effective method of control for this type of vomiting. Attempts to force too early feedings will often cause vomiting in the new-born; this can be avoided by taking no milk mixture for the first forty-eight hours, but a 5 per cent sugar solution instead. Vomiting in the new-born may also be due to toxemia, and may frequently result fatally in the off-springs of toxemic mothers. The vomiting often begins in the first twenty-four hours,

and babies have been known to die of convulsions from nursing toxemic mothers. Intracranial pressure in the new-born may be the cause of vomiting, which is explosive and refractory. It is more often due to intracranial hemorrhage and is accompanied by other striking signs of brain disturbance. Vomiting in the new-born may be due to congenital defects in the gastro-intestinal tract. In esophageal stenosis the infant will take a few swallows of food and immediately regurgitate the whole amount. The diagnosis is easily made by the passage of a bougie and the X-ray. In intestinal atresia the vomiting will usually come on in the first two or three days of life. If the stricture is above the portion of the duodenum into which the bile duct empties, there is no bile in the vomited matter, though the stools will usually contain bile, mucus and blood but no food elements. If stricture is below the bile duct there is bile in the vomited matter but none in the stools.

Vomiting is a prominent symptom in peritonitis from acute pyogenic infections in the new-born. There is usually associated abdominal distention and tenderness, with pouting of the umbilicus and evidences of umbilical arteritis. These conditions are rare but should be borne in mind in the consideration of vomiting in the new-born.

The above conditions constitute a large percentage of the causes for vomiting in infants and children outside of a much larger group due to food disturbances, and constitute about 20 per cent of the cases in which this symptom is troublesome. Food disturbances are responsible for about 80 per cent of these cases in infants. The cause is easily recognized in the majority of cases and a proper adjustment of feeding is all that is usually necessary. I shall only mention some of the common errors responsible for this group:

The disturbance may be due to improper feeding of a normal infant, or a child may develop an intolerance for some ingredient of a well-balanced formula. This is probably more often true of fat than of any other element of the infant diet, and, when once established, is difficult to overcome. The stools are dry, clay colored, with a rancid odor, and are, as a rule, acid in reaction. Sugar intolerance is less frequently seen; when it does occur, the stools are of a greenish color, often grass green, watery, acid in reaction, and the buttocks soon become excoriated. Tolerance for sugar is more easily re-established than is the case in fat intolerance. The chief symptom in either case is vomiting. It may occur soon or long after feeding. In some cases it is only occasional and in large quantities, but it is more common for frequent regurgitations of small amounts of food to take place. The vomited matter usually consists of a sour, irritating fluid, usually a good deal of mucus, and is often accompanied by the belching of gas. Over-feeding is very often the cause of vomiting. The child will show evidences of discomfort with colicky symptoms and abdominal distention, and vomit most of the feeding, when relief of symptoms will often immediately follow. Too little food may also occasionally be a cause. When an insufficient quantity is given, the child will become restless and fretful after feeding and finally vomit. These symptoms are often mistaken for indigestion, when a further reduction of food may be made, but the distinguishing features are the lack of gastric distention, there being usually no evidence of indigestion. Too frequent feeding is likewise a common cause, although the formula may be suitable for the age and digestion. Among other causes might be mentioned improper temperature of food—either too cold or too hot,—improperly balanced food, too much fat, too much sugar and, less frequently, too high protein content; also, unsuitable articles of food, improper handling of foods, bottles and nipples. Important points to ascertain in any case of vomiting are—age of child, duration of attack, frequency, quantity, relation to feeding, type, whether forcible or regurgitant; character, whether mucus, bile or blood is present, onset, whether sudden or gradual; odor and condition of bowels. A careful feeding history should always be obtained with special reference to the kind of foods given, quantity and interval between feeding.

I realize that this is a very rambling and inadequate presentation of such a large and important subject, but my only excuse for attempting to bring to your attention a few of the problems in this connection is the hope that your thoughtful consideration of some of these troublesome points that I have attempted to emphasize may prove of some value in dealing with some of these troublesome conditions.

Columbus was no quitter. That's why every man, woman and child knows who he was, although his death occurred over four hundred years ago.—*selected.*

THE CARE OF CASES OF TRAUMATIC RUPTURE OF THE MALE URETHA.

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(Has returned to Farmville since submitting this paper.)

Traumatic rupture of the male urethra is a rare accident, but one, that when seen, demands immediate attention. The writer has operated upon about fifty such cases in his experience in China. Ten of these have been operated upon in the past two years. All of these cases have been operated upon in the Southern Presbyterian Mission Hospital at Kashing. The records of the cases operated upon prior to 1930 are not in convenient shape for reporting. A summarized report of these ten cases, together with certain conclusions derived from the experience with the larger group, will be presented with the hope that the report may be of interest.

Cause and Incidence. There being no automobiles in this district, the severe injuries with fracture of the pelvis and rupture of the bladder are not seen. The cases encountered here are almost altogether in boatmen. They result from a fall where the patient has struck astride some object, the gunwale of a boat, for instance, and crushed the urethra against the pubic bone. These ten cases were encountered in a two year period during which 2,858 surgical cases were treated in the wards of this hospital. This is an incidence of 0.35 per cent.

Diagnosis. The diagnosis presents very little difficulty. There is always the history of a fall and of having struck aside some object. There is usually the history of blood from the urethral meatus and always a certain amount of urinary retention. The retention is not necessarily complete, as the patient may be able to pass a few drops at a time. One of the cases reported herewith, No. 28239, came in with a history of having fallen twenty-one days previously. Until four days before admission he was able to pass his urine with difficulty. On admission, a catheter was passed down to the beginning of the bulbous portion of the urethra and about 30 c.c. of urine withdrawn. The catheter could not be passed beyond this point. At operation a completely severed urethra was found with a small cavity at the point where the catheter had been held up. Inability to pass a catheter to the bladder is always encountered. Swelling and ecchymosis are present in practically 100 per cent of all cases. As a rule, the swelling is very great, involving the whole perineum, the scrotum and the penis. At times it is so great that it is difficult to expose the glans for catheterization. The ecchymosis is also very extensive, extending over the whole perineum, the scrotum and the adjacent portions of the thighs. As a rule the skin is unbroken.

Interval That has Elapsed Between Injury and Admission. The interval that has elapsed between injury and admission varied in these ten cases from a few hours to twenty-one days. The average was 3.9 days, counting those who came within the first twenty-four hours as one day. If the case that waited for twenty-one days is excluded, as it should be, the average is two days. One waited three days and two for four days before coming in for relief. The accompanying table summarizes the data with regard to interval between injury and admission, degree of injury, days in hospital and result.

Treatment. All of these cases are treated as emergencies. When a suspected case comes in, an attempt is made to catheterize him. If this is successful it is concluded that he has a contusion only. In no real case of traumatic laceration of the urethra has the writer ever been able to pass a catheter. Failing to pass the catheter, the patient is prepared for operation at once. The choice of anaesthesia is optional with the surgeon. The writer has found ether the most satisfactory. The patient is placed in the lithotomy position,

Case Number	Duration	Degree of Injury	Days in Hospital	Result
25056	3 days	Not recorded	38	Healed
26645	1 day	Lacerated	15	Healed
27221	4 days	Severed	12	Vesico-rectal fistula
27374	"At once"	Lacerated	26	Healed
27602	4 days	Severed	14	Healed
28239	21 days	Severed	30	Fistula
29078	20 hours	Severed	20	Healed
29124	20 hours	Lacerated	66	Healed
29150	16 hours	Lacerated	41	Healed
29244	2 days	Severed	21	Healed

cleansed and partially draped. A rather large, new, rubber catheter is inserted and passed as far as possible. The draping is then completed, the penis and protruding catheter being covered. The catheter has given some idea as to the site of the injury, the common location being the bulbous portion of the urethra. If this is the case, the incision is then made in the midline, starting at the posterior edge of the scrotum and extending back towards the rectum for a distance of three to five cm. This incision is carried with one sweep of the knife through all tissues until clots are encountered. The deeper layers are incised to the full extent of the skin incision. One then finds himself in a cavity which has been hollowed out by the bleeding and is filled with blood clots. These are removed manually and the end of the rubber catheter is, as a rule, at once seen. This will be found protruding from the distal end of the completely severed urethra, or from the laceration in those that are incompletely severed. The extent of the injury is next determined. There is, as a rule, not a great deal of bleeding from the walls of the cavity but the torn ends of the urethra bleed freely, bright red blood. Unless this bleeding is too copious or too troublesome, it may be ignored for the time, the subsequent sutures caring for it very nicely.

If the laceration is incomplete, it is usually possible to see the glistening mucous membrane of the inner wall of the urethra. If this is the case, the previously placed catheter is drawn down into the wound and the proximal opening of the urethra sought by directing the tip of the catheter backward and inward, hugging the glistening surface. If in this way the opening is not found it is sought for with a metal catheter. If, on the other hand, the urethra has been completely severed, the torn ends are apt to be separated by a little space, and the location of the proximal opening is much more difficult. In some cases considerable time is consumed. In a total of about fifty cases it has never been the writer's misfortune to fail to find the opening. Should such be the case a suprapubic cystotomy is undoubtedly indicated, followed by retrograde catheterization. Once the opening is found and proven by the withdrawal of urine, the mucous membrane should be picked up with Allis clamps, the metal catheter withdrawn, and the rubber catheter passed to the bladder. Again it is important to prove that the catheter is in the bladder by withdrawing some urine, after which the meatal end can be clamped. This question of proving that the catheter is in the bladder is important because, owing to the separation of tissue layers by the clots, it is often possible to pass a catheter very deep, using a minimum of force, until one feels that he must be in the bladder and yet not have entered the urethral canal at all.

The closure of a completely severed urethra about the catheter is not easy. Long shreds of tissue should be cut away, but the writer makes no effort to trim the ends of the urethra until they are even. The catheter is grasped where it is exposed at the gap in the urethra, between the severed ends and is drawn out into the wound doubled upon itself. Care is taken not to displace the end from the proximal portion of the urethra. Thus the inner walls of the ends of the urethra are brought into view. The distal end of the urethra is then picked up and a curved needle of proper size, carrying a No. 0 chromic catgut suture, is placed in the midline of the inner wall, passing from outside the urethra through all coats, including the mucous membrane. The proximal end is then picked up and the same needle and suture is made to pierce all coats in a corresponding position but in the reverse order. Three such sutures are placed, one in the midline and one to either side. The ends of the urethra are then drawn together and the midline suture tied first, rotating the urethra slightly to accomplish this purpose. After the three have been tied, the catheter is replaced and the remainder of the circumference is closed in a similar manner. This is then followed by two or three mattress sutures. These last not only support the first line but assist in maintaining the calibre by preventing retraction of the two ends. One then again assures himself that the catheter is in the bladder, after which the perineum is closed, usually in two or three layers, with one or two cigarette drains. Drainage is important, but the writer rarely finds it necessary to leave the wound open as is the custom of some operators. The dressing is so designed as to exert moderate pressure.

Subsequent Treatment. The drains are left for two or three days and rarely replaced. The stitches are removed in about ten days. As a rule the healing is by first intention. It is rare for a wound to completely break down. The catheter should be left in for three weeks.

If there is reason for so doing, it may be changed after ten days or two weeks. Of course all of these cases should be followed for months and dilatations done. This is rarely possible in China because of the fact that the patient does not realize the necessity for it, he is usually from among the poorest of the people, and he is apt to question the unselfishness of your advice. Our patients are told to return for dilatation and the probabilities are that if they experienced serious difficulty in voiding they would return. The fact that the writer has been doing these operations here for fifteen years and does not recall a single old case returning for a stricture, despite the fact that there are many cases of stricture seen, may or may not mean that these cases do not develop strictures during the first fifteen years. China is a land of paradoxes. The fact remains that we have no data on late results that is of scientific interest.

Immediate Results. From a study of the table presented, it is not possible to form ahead of time any very definite opinion as to the prognosis of any individual case. The time that has elapsed between injury and operation does not seem to be a determining factor, provided it has not been so great as to allow of the formation of scar tissue. In one of the two cases in which an unsatisfactory result was obtained the time element was undoubtedly a factor. This was case No. 28239. Here twenty-one days had elapsed. The case which showed the best result when all factors are considered was probably No. 27602. He had been injured four days before admission. His urethra was completely severed. Yet he left the hospital after fourteen days with a wound that needed only a little more time for epithelization, with ability to void and no leakage. Including this case, eight, or 80 per cent, left the hospital healed. The average stay of these eight patients was just over twenty-seven days, the shortest being fourteen and the longest sixty-six days. The poorest result, on the other hand, was patient No. 27221 who also came in after four days. This man's urethra was also completely severed. Here the wound was relatively far back. The tissues were greatly swollen and lifeless in appearance. There was marked sloughing of the wound. The drainage catheter did not function and had to be removed. The patient developed a dysentery and left the hospital against advice on the twelfth day. It was thought that there was a vesico-rectal fistula. Where there has been widespread extravasation of urine, the outlook is not so good. The previous state of the urethra as regards infection will of course play a marked role in the healing. The fact that venereal disease is rare among the country population of China has undoubtedly favorably affected the results obtained here. These factors seem to be of more importance than the time factor, unless there has been sufficient time elapsed to allow of scar formation. Undoubtedly any scar formation is a serious handicap as shown in patient No. 28239, referred to above.

Conclusions. From our experience, a satisfactory result may be looked for in 80 per cent of these cases, following adequate exposure and accurate suture of the urethra, if the case is seen within a reasonable time after the injury.

CONVERGENCE-INSUFFICIENCY AND DIVERGENCE-EXCESS.*

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Convergence-insufficiency and divergence-excess are fairly frequent muscular anomalies. They may be easily detected and precisely measured by very simple methods. In order to effectively deal with either, it is paramount that a differentiation between these two conditions be made. They may be, therefore, conveniently discussed together. I am greatly indebted to Duane and Dunnington for much of the material contained in this article.

Convergence-insufficiency is a rather frequent condition. It is said that about 8 per cent of eye examinations will reveal this form of muscular imbalance. This does not imply that all, or even a majority, of these cases produce symptoms, for a great many do not. A definition may be best expressed by Duane's[1] words: "Convergence-insufficiency is a condition the distinctive feature of which is that the eyes converge imperfectly or with difficulty, the disability not being due to impairment in power of the internal recti *per se*." Convergence is accomplished by a contraction of the interni associated with relaxation of the externi. It is an active process and obviously concerned with our near vision. For this reason any symptoms caused by a convergence-insufficiency will be most marked at close range; and, similarly, this condition can be

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best detected when the muscle tests are done at thirteen inches.

Divergence-excess is also common as a primary condition. It may, however, be present for a number of years before our attention is directed to it. For a long time it was thought that the act of divergence was a passive condition brought about simply by relaxation of the interni. I think we must agree with Dunnington[2] "that it is an active as well as a passive affair which is brought about by the simultaneous equal contraction of both external recti accompanied by the simultaneous relaxation of both internal recti." It is probably controlled by the divergence center, or by assuming that such a center does exist. We may define divergence-excess as an abnormally strong tendency for the eyes to diverge when fixing a distant object, this being brought about by over stimulation of the divergence center. Hence, the symptoms that may be caused by divergence-excess are more annoying to the patient at a distance of twenty feet or more, and to diagnose a case of divergence-excess, the muscle tests should be made at a distance of twenty feet.

Diagnosis

In both convergence-insufficiency and divergence-excess the lateral movements of the eyes inward and outward are normal in extent and comitant. Diplopia, if present, is crossed and does not increase when the eyes are turned to the right or to the left. However, double vision due to a convergence-insufficiency increases as the object is carried towards the eyes and decreases as it is carried away from the eyes. The diplopia caused by divergence-excess is present only at a greater distance and increases as the test object is carried away from the eyes. In order to clearly distinguish these two forms of muscular imbalance I should like to emphasize again that the muscle tests be done both at twenty feet and thirteen inches. A pure convergence-insufficiency shows a deviation that is directly periodic, i. e., little or no deviation at twenty feet and an exophoria at thirteen inches. The convergence near-point, the most accurate of all near tests, will be found remote. The prism convergence is subnormal, the prism divergence is unaffected. The amount of exophoria at thirteen inches and the recession of the convergence near-point usually vary directly.

Convergence paresis[3] is a marked form of convergence-insufficiency. It is of sudden occurrence and is usually due to a localized lesion or a functional disturbance of the nerve centers. According to Uhthoff about 3 per cent of the cases are caused by multiple sclerosis. For distance there is little or no deviation, but exophoria and crossed diplopia occur and increase *pari-passu* as the test object is approximated. After the diplopia has set in it is practically insuperable. There is no convergence but the lateral movements of the eyes are unaffected. The convergence reaction of the pupil is usually absent (reverse Argyll-Robertson).

A case of pure divergence-excess shows little or no deviation at thirteen inches with normal convergence near-point and prism convergence. The abnormal findings are revealed when the muscle tests are made at a distance of twenty feet or more. There is marked exophoria at this distance, i. e., the deviation is indirectly periodic. I agree with Dunnington[4] that "A case can be just as true a divergence-excess with five degrees as one with forty degrees." The prism divergence is over eight degrees and may be twelve, fifteen, twenty degrees or more.

A convergence-insufficiency may completely disappear if the causes which produce it can be found and readily removed. Frequently, however, a divergence-excess becomes superadded as a secondary factor. On the other hand, a divergence-excess may become complicated by a secondary convergence-insufficiency. In either instance, ordinary continuous divergent squint is the ultimate result. This develops most commonly, according to Duane, from a convergence-insufficiency. He has listed the steps of such a change essentially as follows: (a) Marked exophoria for near with at first a normal near-point of convergence; orthophoria for distance, and normal diverging power (periodic exophoria). (b) Beginning divergent squint for near with recession of the convergence near-point; beginning exophoria for distance with increase in the prism-divergence (periodic divergent squint). (c) The periodic squint is converted into a continuous squint. (d) Muscular changes (contracture of the externus, stretching and weakening of the internus), producing absolute impairment of rotation inward and excess of rotation outward.

A continuous divergent squint develops from a divergence-excess by the reverse process, that is: (a) Exophoria for distance with excessive prism-divergence with normal near findings (periodic exophoria). (b) Beginning diver-

gent squint for distance with crossed diplopia and further increase in prism-divergence; beginning exophoria for near, but with convergence near-point normal (periodic divergent squint). (c) Marked increase of the exophoria for near, and gradual recession of the convergence near-point (consecutive convergence-insufficiency). Squint for near less than for distance. (d) Conversion of the periodic into a continuous squint. (e) Muscular changes as above.

Causes

Convergence-insufficiency is usually classified as accommodative and non-accommodative. The former occurs in patients who really have full power of accommodation, but who for some reason use only a portion of this power. The power to converge being intimately associated with the accommodation is thereby weakened. This form often occurs in uncorrected myopes, and in hyperopes and presbyopes who put on convex glasses for the first time. These patients do not use their convergence to the utmost and hence, the accommodation suffers. The convergence is similarly weakened in patients who have very poor vision for near and in whom there is very little impulse to converge (visual form). Hyperopia, anisometropia, etc., are frequently present in this kind of case and the convergence-insufficiency may be relieved by the proper glass. The non-accommodative form of convergence-insufficiency comprises about 60 per cent of the cases. It may be caused by any condition which lowers the patient's general resistance, such as prolonged systemic disease, sinusitis, anemia, focus of infection, etc. We must admit, however, that many cases of convergence-insufficiency occur in young robust individuals for which no cause can be found. The causative factors which may play a part in divergence-excess are somewhat obscure. We know that it is frequently found in young adults, and it is often present for years without manifesting symptoms. It is the common impression that myopia is the most frequent error of refraction found, but Wooten has shown that divergence-excess is more common in hyperopes than in myopes. Dunnington believes that this is a mere coincidence due to the larger number of hyperopes seen. Whatever statistics may show, a divergence-excess is probably not refractive in origin. It may be secondary to a convergence-insufficiency as we have seen.

Symptoms

Convergence-insufficiency causes symptoms primarily when near work is attempted. It may be present for a long time without symptoms. Diplopia is a feature of some cases. Vertigo, asthenopia and headache are not infrequently complained of. There is often present a curious sensation of fatigue over the interni which is relieved somewhat by pressure with the finger. In addition there may be various other reflex disturbances. It is not always easy to decide whether the symptoms in a given case are due to convergence-insufficiency or to some other condition.

Divergence-excess, on the contrary, causes symptoms primarily when we look at distant objects, particularly when such objects are moving. Slight degrees of divergence-excess may not cause any symptoms. In the more marked cases, the eyes are able to maintain distant vision only with great difficulty and when this stage has been reached, headache, crossed diplopia, asthenopia, and even gastric symptoms may result.

Treatment

In the treatment of a case of convergence-insufficiency, the possible causes should be first sought and eliminated if possible. Frequently a correction of the myopia, if present, will bring about the desired result. In many instances improvement in the patient's general condition will likewise act favorably on the weakened power of convergence. A presbyope with marked weakness of convergence is often made more comfortable by adding a weaker reading glass, as in this way he is allowed to hold his book at a greater distance from his eyes with the result that less convergence is necessary. If the convergence-insufficiency after these measures does not improve and is still causing symptoms, we next resort to exercises for the interni. This is accomplished by having the patient practice converging exercises on a small test object (white headed pin) as it is carried towards the nose, or by having him exercise with prisms base out. In practising with the prisms, the test object should be at the reading distance and the strength of the prisms should be increased from time to time until a prism of fifty or even seventy degrees can be overcome. It may take several weeks before this result can be obtained. The patient should not be forced to accomplish the feat of overcoming prisms too rapidly. This does not imply that our instructions to the pa-

tient should not be explicit nor definite. We usually specify that he perform these exercises a definite number of times morning and evening. Finally, if conservative treatment has failed, a resection or other shortening operation of one of the interni must be considered, but only as a last resort. I believe the wearing of prisms base in for relief of symptoms actually does more harm than good in the end.

The treatment of divergence-excess is surgical. A small amount of exophoria does not usually cause symptoms; a larger amount would render the wearing of prisms at distance only, impractical. The operation best suited to this type of case is a tenotomy of one or both externi depending on the amount of deviation originally present. We usually operate on the eye showing the greatest tendency to diverge and an immediate over-correction is desirable. In mixed cases we have to treat both conditions giving our attention first to the primary condition.

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BULLET WOUNDS OF THE PERICARDIUM. REPORT OF AN UNUSUAL CASE.

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The course of bullet wounds in the human body is most variable. No doubt during the late wars many cases were observed, but, unfortunately, few reported. In 1910, Zesas[1] collected the records from literature and found 118 cases of wounds of the heart due to foreign bodies but no classification as to injuries of the pericardium was made. Recent literature shows the injuries of the pericardium to be very uncommon. During the World War several interesting cases were reported where the injury was due to shrapnel.

Jones[2] reports a case of a soldier who in 1915 was wounded by shrapnel which entered the left chest, the shrapnel stopping in the lower anterior pericardium. The shrapnel was removed with complete recovery.

Skirving[3] reports a case of a soldier who in 1915 was shot with shrapnel under the left axilla above the posterior axillary line. One year later he consulted his physician, complaining of pain in the chest and shortness of breath, and a history assimulating pericarditis. X-ray examination revealed a large piece of shrapnel in the posterior wall of the mediastinum, which was removed, followed by complete recovery.

Barrington-Ward[4] cites an interesting case of a British soldier who was wounded in France in 1915. The bullet entered the left chest in the mid-axillary line. There was no wound of exit. Following six weeks of hospitalization the soldier was returned to service. Six months later he suffered from sharp pains in the chest with palpitation of the heart and shortness of breath on marching. Upon returning to the hospital an X-ray examination revealed a bullet lying in the pericardium near the left border of the heart, just above the diaphragm. The bullet was removed, followed by complete recovery.

The time a foreign body may remain in the pericardium without giving subjective symptoms is a variable factor. Barcia[5] reports, in 1923, an extremely interesting case of a bullet which had been in the pericardium for twenty-two years. The bullet seemed to be located in the anterior wall. He reports that at no time has there been any appreciable disturbance, and at the present time the patient is enjoying excellent health.

In 1929 Davison[6] reports a case in which two bullets pentetrated the thorax, either of which might have caused death. The first penetrated the lung near the hilum and evidently injured one of the larger vessels, resulting in a massive hemothorax, pneumonia, and later empyema. The other injured the pericardium, resulting in pericarditis and, finally, a localized abscess of the pericardium. These bullets entered the left chest wall and were removed with complete recovery.

Hentz,[7] of the U. S. Veterans Bureau, reports, in 1929, a case in which, following a pistol shot wound in 1920, the bullet was found in the anterior pericardium, and at the present date the patient suffers no ill effects.

Stinger[8] and Mereiness[9] report cases of bullet wounds of the pericardium with removal and recovery without subjective symptoms. J. Braul[10] reports an interesting case of a bullet wound, ending in the pericardium, which had perforated the esophagus. Irger[11] reports two cases of bullet wounds in the pericardium, resulting in complications and death.

Case Report

V. B., age 18, white, male. Entered Bethany Hospital November 27, 1930. Chief complaint: Bullet wound in head. Past history: During the afternoon of November 27th the patient and his brother were arranging to go hunting. During their preparation, while in the kitchen about six feet apart, the gun, carried by the patient's brother, was accidentally discharged. The patient fell to the floor immediately. Following early orientation, he noticed a small quantity of blood behind his right ear with a small punctured wound. The wound was dressed and patient sent immediately to the hospital.

The trip to the hospital required several hours, during which time the patient complained of a severe headache and nausea which was accompanied by vomiting, the vomitus containing a small amount of blood.

On admission to the hospital, examination revealed a punctured wound behind the right ear posterior to mastoid process (inflicted by the .22 rifle bullet) with no point of exit. Facial paralysis (right); edema of skin and subcutaneous tissue surrounding wound; nose negative; throat negative; left ear normal; right ear revealed bulging drum, inflammation of Shrapnell's membrane and of long process malleus, Weber to right, Shawbach normal, Rinne positive. Auditory nerve test normal; deafness is due to the middle ear.

Examination of Chest. Lungs: Equal diaphragmatic expansion in both sides. No areas of dullness found. No rales heard. Breath sounds normal—rate 20 per minute. Lungs essentially normal.

Heart: No murmurs heard. Rate 100 per minute. Regular. Good volume. No enlargement. Blood pressure, systolic—145, diastolic —85.

Remaining physical examination not tabulated since it was essentially negative.

Urinalysis: Straw color, cloudy, acid. Sp. gr.—1030. Albumin—one plus. Sugar—negative. Microscopic—18 to 20 pus cells to H. P. F. Blood count: Leukocytes—10,700. Haemoglobin—95 per cent.

November 28, 1930:—X-ray examination of the head reveals: A small calibre bullet has struck the tip of the right mastoid and tiny fragments of lead are distributed inferiorly to petrous portion of temporal bone (Figs. 1 and 2). There is a soft issue swelling of the post-pharynx; this offers the supposition that the main portion of the bullet passed into the pharynx and may have been swallowed.

November 29, 1930:—Fluoroscopic examination of chest and abdomen reveals, as follows: Fluoroscopic examination of the abdomen is negative. There is, however, a small calibre bullet which occupies a position at a point near the apex of the heart (Figs. 3 and 4), which moves with cardiac pulsation, and is definitely in the anterior aspect of the pericardium. An attempt to demonstrate a shift

Fig. 1.—Lateral view of skull shows tiny fragments of lead scattered along the inferior of the petrous portion of the temporal bone.

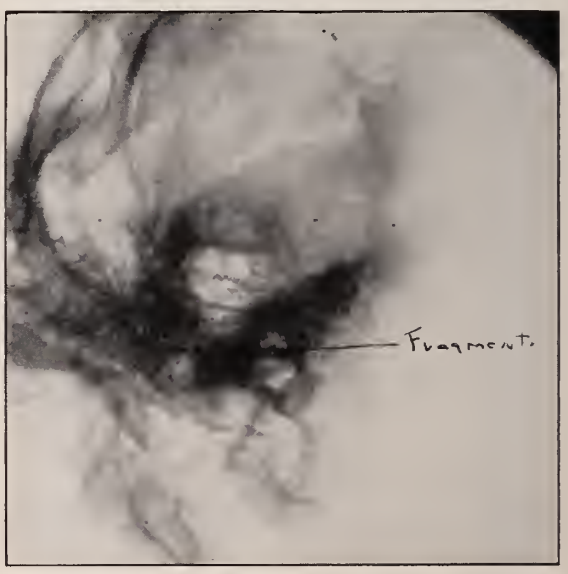

Fig. 2.—Lateral view of temporal area showing numerous pieces of lead scattered around temporal bone—petrous portion.

of the shadow by changing the position of the patient was not successful.

November 28, 1930:—Patient complained of a severe headache and deafness in the right ear. There was also a slight sore throat with soreness along the entire right side of neck. Temperature—99. Pulse—96. Respiration—24.

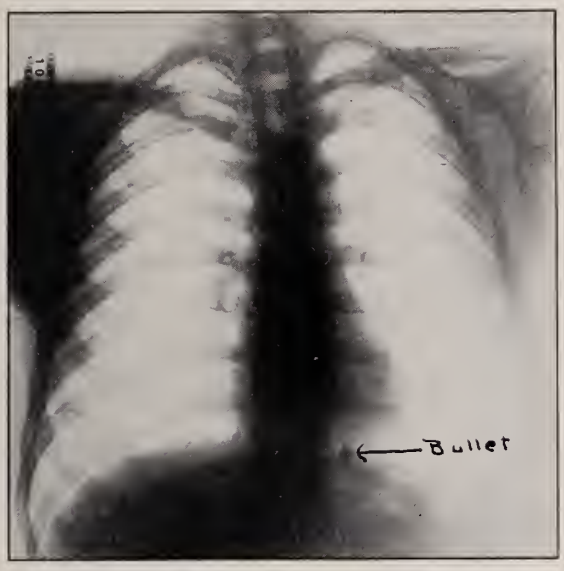

Fig. 3.—Antero-posterior view showing bullet in lower pericardium.

November 30, 1930:—Patient had slight nose bleed. Complained of headache in temporal region.

Fig. 4.—Lateral view showing bullet in lower mediastinum.

December 2, 1930:—Headache much improved. Temperature—98². Pulse—88. Respiration—20.

December 5, 1930:—Patient complains of severe headache and earache (right).

December 10, 1930:—Patient in excellent condition.

December 12, 1930:—Patient discharged in excellent condition.

Surgical procedure was not permitted while patient was in hospital, and in a recent communication patient says he is enjoying excellent health.

Summary

Report shows the unusual course of a bullet in the human body, entering posterior to the right ear and ending in the anterior pericardium, without hemorrhage in the neck, mediastinum or lungs; without injury to any nervous structure (except temporary facial paralysis); without injury to any important structure in the body; without any reaction of the soft tissues in the neck; without infection or abscess formation. There was no evidence of pericarditis or injury to the heart, thereby showing the tolerance of the heart to foreign bodies without symptoms, two years after accident. There was no history of a previous injury from bullet; neither was there a bullet in the abdomen.

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COLLES' FRACTURES.*

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This subject has been selected because it is one of the common fractures that very often falls to the general practitioner for treatment; and because there are several practical points in its treatment which, if carefully observed, will greatly reduce the disability and deformity which so frequently follows.

Formerly this was considered the most common fracture, and said to represent about ten per cent of all fractures. However, the combination of hard surface roads and rapidly moving motor vehicles has placed fractures of the skull at the head of the list by a wide margin.

No attempt will be made here, either to limit strictly to the type originally described by Colles, or to exhaust the subject with all of its variations, but rather to stress several important features in the treatment of this type of fracture and consider briefly a few of the common complications.

Let us consider a typical case which represents the features we are particularly interested in for this discussion, and which we will try

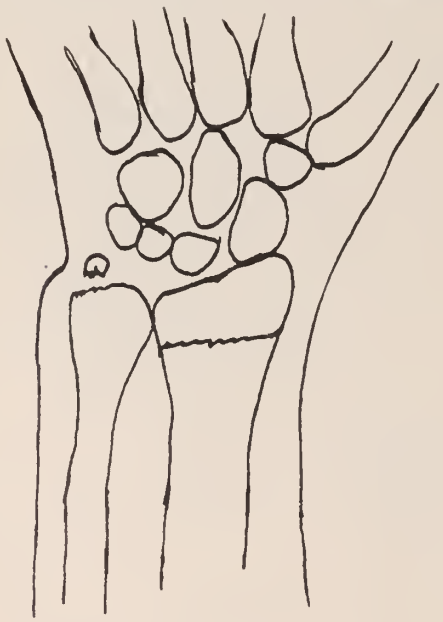

Fig. 1.

to illustrate by diagrammatic sketches. A lateral view of the wrist will show the characteristic silver fork deformity with which we are all familiar and the degree will be proportional to the amount of backward displacement of the lower fragment (Fig. 2). The anterior view will show a lateral and anterior prominence of the lower end of the ulna, and the hand will look an though it were displaced about one-half inch to the radial side (Fig. 1). An X-ray of this will show on lateral view the displaced lower fragment and the change in relationship between the articular surface of the lower end of the radius and the long axis of the bone (Fig. 2). Normally a line drawn through the long axis of the radius should meet the articular surface at a right angle (Fig. 4). In impacted and comminuted fractures this relationship may be greatly altered with very little apparent change in the general contour of the bone, due to the fact that in the backward thrust there is more pressure and greater impaction on the posterior margin of the fracture line. In such a case if the impaction is not broken up and the normal relationship of the articular surface and the long axis of the bone restored, there will certainly be both deformity and disability; and it is this type which so frequently goes unreduced. Now, if we look at an antero-posterior view, the fracture line in the radius will be seen and frequently a separation of the styloid process of the ulna, which is an avulsion fracture with a tearing of the ulnar collateral ligament (Fig. 1). This is of minor importance unless it is displaced sufficiently to become involved in the

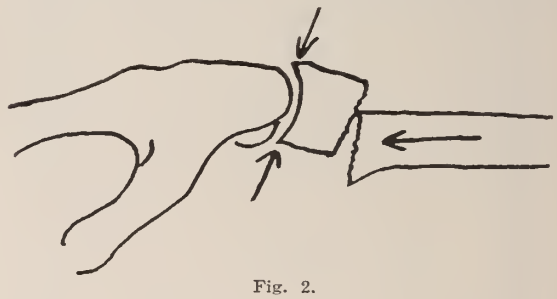

Fig. 2.

joint. However, its position can often be improved and the ligament be put in a more advantageous position for healing. We have also seen here the importance of both a lateral and an antero-posterior view of the wrist—neither alone is sufficient.

Reduction will be much easier to accomplish and the ultimate amount of swelling greatly decreased if attempted early. Very frequently the diagnosis is sufficiently clear that an X-ray is not necessary before reduction; but every case should have an X-ray after reduction and always both views should be taken.

*Read before the Wise County Medical Society at its meeting in Norton, Va., May 25, 1932.

Nitrous oxide and oxygen is the anesthetic of choice from the standpoint of simplicity and time saving. If five to ten cubic centimeters of a two per cent novocain solution are injected between the fragments and ten minutes allowed to elapse, a very satisfactory anesthesia will result. For the best results it is necessary that the solution be injected between the fragments, and ordinary aseptic technique is safe. Ether and other anesthetics may be used if desired.

To accomplish reduction, take the patient's hand as if to shake hands—right in right or left in left as the case may be, and grip the wrist with the other hand, placing the thumb on the posterior surface at the site of the fracture. Now over extend the hand and apply pressure with the thumb, and Fig. 2 will be converted into Fig. 3. The hand is then flexed, giving the position shown in Fig. 4. Next, the hand is pronated and turned sharply to the ulnar side, giving what may be spoken of as ulnar flexion or the goose neck position. This position will tend to replace the fractured styloid process of the ulna and place the ulnar collateral ligament in a more favorable position for healing as well as restore the normal relations of the ulna and radius. With a little practice this is all done with one continuous motion, moderate traction being applied to the hand throughout the procedure. If impaction is present, it should be broken up by rocking back and forth before the reduction is begun.

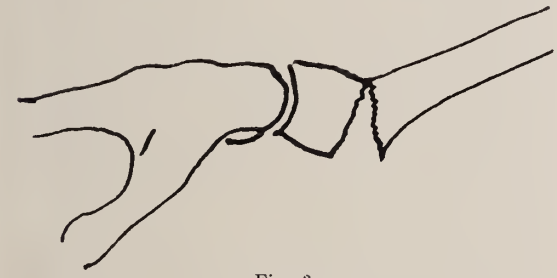

Fig. 3.

In a large per cent of cases it is desirable to immobilize the wrist and hand in this position. With the elbow flexed and held by one hand and the fingers held by the other, it is easy to maintain this position while an assistant covers the hand and forearm with glazed cotton and wraps a few layers of plaster around the entire part, including all but the fingers and thumb, and making a round or two above the elbow to prevent the cast from slipping down. After the plaster is partly dry it can be cut up the ulnar side far enough to be absolutely sure that it will not become too tight. This method of fixation has several advantages and is applicable to a large percentage of cases. However, when the styloid process of the ulna is not torn away, and the fracture is such that there is no danger of slipping, and when the normal relations of the ulna and radius have not been disturbed, parallel board splints or metal splints may be used to advantage. A word might well be said here in favor of the moulded plaster splint. However, it requires some practice and skill to become proficient in the art of moulding plaster splints.

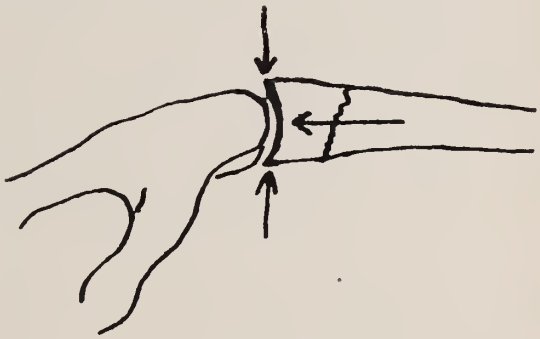

Fig. 4.

After fixation has thus been accomplished an X-ray with two views is essential. Here, again, we must observe the relationship of the articular surface and the long axis of the radius and it should correspond to that of Fig. 4.

After ten days the plaster is bivalved and the hand allowed to drop to the side. In badly comminuted cases a few more days are allowed. The plaster, if not over-thick, can now be trimmed and bent enough to be replaced in the position the hand assumes without handling. At two and a half weeks, only the anterior part is necessary and can be applied so as to allow free use of the fingers and moderate active motion of the wrist. At three to three and a half weeks the splint may be removed and free active motion begun. No severe strain should be placed on the injured wrist in less than six weeks and then only after having been gradually brought back into use.

In cases seen late it is often difficult to get position without open operation. Up to three weeks this can usually be accomplished by hand. From three to six weeks the "Thomas wrench" will usually give results without too much bruising. Later than this it is best to

do an osteotomy, first cutting almost through the radius from the back with a thin osteotome, then reducing the deformity and holding it in ulnar flexion. The indications for this operation are, as a rule, ulnar pain and ulnar laxness rather than deformity. The reduction restores the normal relation of the ulna to the radius and allows the ligaments to shorten and maintain the normal position.

With careful treatment serious complications are not common, and prompt union practically always follows. Contracture and shortening of muscles and tendons is prevented by early active motion and avoidance of prolonged fixation.

Occasionally arthritis of the wrist joint occurs in these cases, with pain, local heat and swelling, and often marked osteoporosis will be seen in the X-ray. Here only a very limited amount of active motion should be allowed (never passive motion), foci of infection should be removed, and heat applied to the part. These cases usually terminate favorably, but often only after months of careful treatment.

Colles' fractures, then, should be reduced early, X-rayed after reduction, and special attion paid to the relation of the articular surface of the radius to the long axis, as well as to the general contour of the bone.

Plaster fixation in ulnar flexion is applicable to most cases, restores and maintains the normal relations of the ulna and radius and tends to bring the styloid of the ulna back into position when displaced. This position should be maintained as a rule ten days and rarely if ever over fourteen days.

This method of treatment with early active motion and avoidance of prolonged immobilization will give a high per cent of excellent results and reduce complications to a minimum.

ENDOCERVICITIS—SPECIAL REFERENCE TO CASE MANAGEMENT.

JULIAN M. HOWE, M. D., Washington, D. C.

Endocervicitis is a most widespread and troublesome disease. Its etiology may be divided into two general classes: First, gonorrheal: more often seen in nullipara. Second, septic or traumatic; more frequently seen in multipara or cases that have aborted. According to conservative statistics, endocervicitis occurs in from 70 to 80 per cent in multipara and 7 to 12 per cent in nullipara.

Many cases of endocervical infections may be traced back to a fetal condition where the gland bearing columnar epithelium is not confined to the cervical canal, but extends on to the portio. The infection may follow one of the acute exanthemata, or from a colon infection caused by improper care during an attack of diarrhea. Ovarian dysfunction and anemia reduce the general health, lowering the acidity of the vagina to the point where the normal vaginal flora no longer encounter conditions conducive to optimal growth, then other bacteria and pyogenic organisms may invade the vagina and grow, inducing an infection of the cervix.

Pregnancy up to the sixth month is not a contraindication for the treatment of endocervicitis. A large number of women go into labor with an eroded and infected cervix. I have observed a number of cases which developed a fever several days following delivery for which no other focus of infection could be found.

Pathological changes which take place in the cervical endometrium bring about an infiltration of the round cells into the sub-epithelial tissue around the glands. This stimulates the glands to proliferation and increases their activity, producing a mucous secretion. Some of the glands then become distended and covered with a single papillary layer of epithelium, closing the glandular ducts. This produces the nabothian follicles which can be felt with the examining finger. Eversion of the cervix is an overgrowth of endometrium in the cervical canal going beyond its normal limits on to the vaginal part of the cervix. This gives rise to a red, raw, eroded appearance upon inspection.

The most characteristic symptom of endocervicitis is a vaginal discharge, usually mucopurulent in nature, in contradistinction to that from the uterus which is serous in character. Accompanying symptoms, such as backache, pelvic soreness and tenderness, and a sense of weight in the pelvis, are often noted.

The results of chronic infection of the cervix, such as cystic changes in the ovaries, chronic salpingitis, and chronic endometritis often cause sterility, menstrual disturbances, and several cases of stricture of the ureter have come under my observation in which I feel reasonably sure that an old chronic endocervicitis was responsible, due to extension of the infection by way of the lymphatic channels.

The more serious phase of endocervicitis is the pre-cancerous cervix. Cancer is probably never a primary development, and, wherever it appears, there has been a pre-exisiting lesion. A lesion which does not tend to heal of itself is without question a factor in the causation of cervical cancer.

Care must be used in treating an early case of endocervicitis because of the danger of precipitating an acute pelvic inflammatory process. Rest should be advised in conjunction with palliative treatments, such as hyperemia, local applications of some mild antiseptic, followed by medicated tampons. A good procedure to follow is first to wash or mop the vagina and cervix through a bivalve speculum with a 5 per cent soda bicarbonate solution. A Bier hyperemia cup, the largest size that will pass through the speculum, connected to a Bigelow 220 c.c. syringe, is placed over the cervix and suction is made for from three to five minutes; then the pus and mucus is removed and the cervical canal cleared. A pledget of cotton saturated with 10 per cent silver nitrate solution is introduced into the cervical canal to remain from three to five minutes followed by the insertion of a medicated tampon against the cervix. After the acute inflammation has subsided, vaginal diathermy may be used to advantage, especially if there is an involvement of the tubes.

One must not fail to treat Skene's glands, first by massaging the urethra and its surrounding glands, followed by irrigation with a ball pointed needle and syringe with a 5 per cent soda solution and followed by injections of 15 per cent argyrol solution.

Procedure for Cauterization

The patient is put in the dorsal lithotomy position, a bivalve speculum introduced, and the vagina and cervix cleansed with a non-irritating antiseptic. The plug of mucus is removed from the cervix with an alkaline solution and a cotton pledget of 10 per cent cocaine or 4 per cent butyn may be left in the canal for four or five minutes. The cervix may then be grasped by a pair of Volsellum forceps and drawn up into view. With a nasal tip cautery, beginning as near the internal os as possible and drawing the tip of the cautery toward the operator out on the cervical lip not to exceed 5 mm. in depth, about three striae anteriorly and three posteriorly should be sufficient. However, several additional striae are often needed on the cervical lip to destroy the erosions. The current is controlled by a hand button, and when the patient complains of cramp, the hand button is released. The cramp is due to the muscular contraction of the internal os, or perhaps to the heat generated inside the cervical canal. One cauterization may be sufficient; if not, the treatment may be repeated at intervals of two to three weeks.

The patient is warned to expect some slight bleeding, either immediately or when the slough separates. She is instructed to wear a pad for a few days, because the discharge is increased almost immediately. After about seven days, if the whole endocervix has been cauterized at one time, it has a dark gray necrotic appearance and quite some odor. If the odor is too offensive, and as a precaution, each day the cervix is painted with 4 per cent mercurochrome, and douches of one ounce of lacto-dextrin to one pint of warm water may be given daily. The necrotic material disappears, usually after two weeks, and as a rule after the sixth week the patient may be discharged as cured.

Treatment by Conization

The results from treatment by conization are very satisfactory, due to the fact that it removes not only the diseased glands in the mucous membrane lining, but also the tissue in which they are imbedded, thereby promoting lymphatic drainage, so important for complete cure. The relining of the cervical canal proceeds rapidly and eventuates in a cervix with intact anatomical structure and a canal lined by squamous instead of the original columnar epithelium.

Conization has for its object the eradication and destruction of the diseased endocervical mucous membrane with its contained glandular structures, and this is accomplished with the preservation of the underlying muscle as well as the uninvolved tissues.

Procedure for Conization

Local anesthesia only is necessary to insure a painless operation, making it an office procedure with no economic loss to the patient.

The patient is placed in the lithotomy position, with legs well separated, and draped in the usual manner. The operator seats himself comfortably before the patient.

A Baklite speculum is inserted into the vagina to expose the cervix. The vagina and cervix are freed of all discharge by swabbing with hydrogen peroxide and wiped dry.

Crystals of cocaine are placed in the cervical canal and allowed to dissolve, or an applicator saturated with butyn solution of 15 per cent is introduced into the cervical canal and allowed to remain for five minutes.

The machine may be either a radio knife or an electro-surgical tissue cutting apparatus. The inactive, wet metal electrode, about six by six inches in size, connected to the cutting machine through a conducting wire, is placed on the abdomen and held firmly in place by means of a strap or sand bag. The patient is directed to make firm compression with both hands, so as to distract her attention.

The cutting current is turned on until a stage is reached which will provide sufficient current for the operation. The tip of the instrument, which consists of a tungsten wire two inches long attached to a silicon rod insulated by rubber, is placed about one-eighth inch from the external os and the foot switch closed, thereby turning on the current. With the current still on, the silicon portion of the instrument is immediately passed into the cervical canal up to the internal os, and with a rotary motion the mucous membrane is coned out. The foot switch is released and the instrument withdrawn. The mucous membrane with its contained cervical glands will be found adhering to the tungsten wire and the silicon tube, and a few drops of blood may appear in the cervical canal. The instrument may be re-introduced and more tissue removed by repeating the previous steps if the operator so desires.

An applicator saturated with a 2 per cent mercurochrome solution is now placed in the cervical canal and left *in situ* for several minutes. A light packing of the vagina with gauze moistened with 1 per cent mercurochrome solution is all that is needed to control the slight amount of bleeding which might occur. The danger of subsequent bleeding is practically nil.

The instructions and after-care of a patient having a conization are the same as those following a cauterization.

Advantages

This relatively simple office procedure for the treatment of endocervicitis has given my patients a very satisfactory result. The patient suffers no pain or discomfort, nor does it discourage her with long drawnout treatments.

The symptoms are relieved because the mucous membrane with its contained glands is removed. No muscular tissue is removed, the cervix remaining functionally normal, and future parturition is not interfered with mechanically.

The procedure may be repeated as often as is deemed advisable to accomplish its object.

Conization can be used for removing tissue for microscopic examination particularly in cases where dilatation and trauma are inadvisable.

Cauterization or conization is not recommended as a cure-all for any type of gynecological disorder. To insure success, all pathology extraneous to the cervix must be carefully looked for and treated.

In conclusion, cauterization and conization are offered as an additional link in the chain of progressive methods to relieve the symptoms of chronic endocervicitis with the least discomfort to the patient.

1309 *Rhode Island Avenue, Northwest.*

A REVIEW OF THE PRESENT DAY THERAPY OF ALIMENTARY TOXICOSIS.*

SAMUEL H. RIVERS, M. D., Calvin, Va.

Alimentary toxicosis in infancy is a picture of violent purging, vomiting, rather extreme shock, weak pulse, paleness, rather marked dehydration, as evidenced by inelastic skin, and usually acidosis.

There have been much work and scientific investigation as to the etiological factors responsible for this serious and rather frequent infantile disease within the last few years, but no definite and specific cause has been established as yet. Dodd recently reported the finding of an increased amount of guanidine in the blood serum of children suffering from this disease and reported successful therapy with calcium. Marriot,[1] in his book on Infant Nutrition, stresses the importance of abnormal bacterial growth in the upper gastro-intestinal tract as a causative factor. He says that overfeeding and the feeding of improper articles of food contribute to the growth of these bacteria besides having an irritant action to the gastro-intestinal tract. He states that irritant foods also seem to cause an increased flow of alkaline mucus which decreases the acidity of the gastro-intestinal secretions and thus creates a condition more favorable for the survival of harmful bacteria. It has been estab-

*Read before the Wise County Medical Society at its meeting in Norton, Va., May 25, 1932.

lished that there exists a predominance of colon bacilli, in the upper gastro-intestinal tract during severe diarrheas. Although these may cause trouble in the upper intestinal tract, they do not cause trouble in their natural habitat, the lower bowel. It seems that there might be an actual invasion of the body by the colon bacilli as well as absorption of their toxic products. It has been shown in the animal that when the contents of the duodenum are kept alkaline, colon bacilli can be demonstrated in the thoracic duct. Plantega has shown that filtrates from broth cultures of colon bacilli, when given in minute quantities by mouth, cause vomiting and purging but do not cause any symptoms when introduced from the lower bowel route. There is some evidence in the literature to give histamine as the probable offending protogenous material.

Speaking of the mortality of this disease, until recently it has been appalling and something of which to be ashamed. It seems that until the last few years an artificially fed baby had little chance of survival. Until recent years most any species of young animals had a better opportunity of survival than the young of the human species. Within the last ten years complete failure in artificial feeding has been converted to a point approaching complete success. Elaborate mathematical formulae and wet nurses have been supplanted by a more successful system.

The death rate in foundling and infant asylums was astounding and almost unbelievable in the eighteenth century. Durand,[2] in an excellent article in the *Journal of the American Medical Association*, Vol. 99, No. 4, July 23, 1932, states, "Until recently, the mortality of artificially fed babies has been appalling. Marriman, in the early part of the nineteenth century, said that hand-feeding proved fatal in seven out of eight of these miserable sufferers. The death rate in the foundling and infant asylum was particularly terrible. In Rouen, from 1763 to 1765, only three of 132 hand-fed infants survived; in Dublin, of 10,000 admissions from 1775 to 1796, less than 1 per cent lived; the Paris Foundling Hospital furnished a mortality of 85 per cent of 32,000 admitted; London institutions, up to 1767, when Parliament required infants to be taken to foster parents in the country, reported 2,690 deaths in 2,800 annual admissions. And until the last decade these distressing statistics were not greatly improved on in the orphanage."

The success in the treatment of alimentary toxicosis has improved as artificial feeding has improved. Successful feeding is probably the most important part of the prevention. Severe diarrheas rarely occur in breast-fed babies. The prophylaxis probably can be summarized by the statement, "To prevent severe diarrheas, keep the babies healthy." This statement takes in the proper nutrition, keeping in mind the ratio of 1, 2, 3, in feeding proteins, fats and carbohydrates. Pediatricians are also feeding babies earlier than formerly, with still better results. One author states that more rickets develops from one pint of milk than one liter of milk. Man cannot live from bread alone and neither can babies, from milk alone. But milk is one of the basic foods of the diet, and will probably remain so for a long time, but the point that perhaps should be noted particularly, and guarded against, is the feeding of milk alone without beginning the feeding of other articles of food sufficiently early so the infant will not suffer from the lack of vitamines and perhaps develop a nutritional anemia. Egg yolk, cereals, fruit pulp, meat, fish, vegetable pulp, etc., are being given earlier it seems. The German school says that the intake of milk should never exceed .5 liter, and some of our most noted pediatricians are not surpassing this quantity. All babies should have viosterol or Haliver oil with viosterol as a preventive of rickets. Many children cannot take cod liver oil, and Haliver oil with viosterol is a great discovery for these children and for general use in the summer season. Water should be encouraged during the summer season and the intake should perhaps be ample. Except during periods of excessive heat Durand says the amount which probably should be taken should be about 1/5 of the infant's weight during the early weeks, 1/7 at six months, and ⅛ at one year. If the water supply is kept around these limits, he says less vomiting occurs, the bottle is more readily emptied, the bed and clothing are not so constantly soaked, the insulation against changes in temperature is better, and the skin is less irritated.

Keeping the baby cool, giving him plenty of fresh air and protecting his delicate nervous system is of great benefit in the prophylaxis of diarrheas. He should always be in a calm, quiet and uncrowded atmosphere. The pro-

tection of the baby from too many admiring friends and handling is becoming more important in the eyes of many of our pediatricians. A child with an over-wrought nervous system is far more apt to develop a diarrhea than one with a quiet and proper environment. The boiling of the milk is a very important step in prevention.

Many cases of alimentary toxicosis are first seen and perhaps treated entirely by general physicians, and the percentage of these cases that are treated by the practitioner is perhaps high. Many isolated sections cannot have a pediatrician and depend entirely upon the family physician. It therefore behooves the conscientious physician to keep himself alert as to the improvement in the therapy of this disease and to almost rival the expert in the treatment. Should he not do this, the mortality of his patients with this condition will be nearer 100 per cent than 50 per cent. The fact of the matter is, should he not be prepared to administer to the infant's needs according to the improved methods of late years, his little patient will probably not survive, and he may not anyway if treated in the most expert manner. Every effort should be made and every straw turned to save the lives of these little fellows. They have their lives to live, and, if they survive an emergency like this, they are not in any way handicapped, but the man who is suffering with cerebral softening cannot hope to be much better.

Marriot divides the treatment into the following general principles, which are applicable to all diarrheas:

1. A recognition and treatment of any existing infection.
2. Rest of the gastro-intestinal tract.
3. Food adapted to the limited capacity of the intestinal tract.
4. Retention and maintenance of the fluid and mineral balance.
5. Blood transfusions in severe cases.

Marriot greatly stresses infections like pyelitis, otitis media and laryngopharyngeal infections. He says they should always be looked for and, if found, treated.

There should perhaps be a starvation period in any severe case of diarrhea. The intestinal tract is greatly irritated and the child's digestive function is almost *nil*. Any contents of the gastro-intestinal tract is probably a culture media for harmful bacteria. Consequently, the food must be adapted to the digestive capacity or you will only be adding oil to the fire. A preparation, which Marriot recommends and which I have found very useful, is buffered lactic acid solution. The composition is as follows:

Sodium Hydroxide, 10 per cent....	20 c.c.
Lactic Acid Solution, U. S. P.....	15 c.c.
Water *ad*	1000 c.c.

This can be sweetened with saccharin and given *ad lib.* It has a taste similar to lemonade. There seems to be a rather quick improvement in the general condition of the patient after taking and retaining this, and a decrease in the number of bowel movements. Marriot has noted that B. coli will disappear from the stomach contents after feeding this solution. I find it will often be retained when nothing else will. Occasionally there can be added 5 per cent red label karo syrup without harm.

After a sufficient starvation period, when the stools have improved as well as the general condition, 1 part protein milk may be added to 10 parts buffered lactic acid solution, and, if no untoward symptoms develop, increase the feeding each day by half ounce. Durand recommends giving 10 c.c. protein milk with 6 per cent carbohydrate added, and the feeding increased 10 c.c. each day until on the eighth day the nutritional needs are being taken.

Probably the most important step in treatment of such a condition is to maintain and supply the fluid and mineral needs. Ringer's, normal salt, or Hartman's solution can be given subcutaneously, intraperitoneally, intravenously, or, in some cases under one year, in the superior longitudinal sinus. The general physician should select the route with which he is most familiar, but fluids with perhaps 5 per cent glucose must be gotten into the body and kept there in quantity sufficient to maintain the turgor of the skin. In many cases small doses of adrenalin or other stimulant should be given to help the circulation and thus speed up the absorption of fluids. The route which will perhaps be used most by the general physician, of which I am one, is the peritoneal route and the subcutaneous route. Karelitz and Schick,[3] in a recent article in the *Journal of the American Medical Association*, gave an interesting paper in which they had treated fifty-four cases with the continuous venoclysis method with Ringer's and 5 per cent glucose. Soon after the fast, initial 100 to 250 c.c. were

given, the patients were given transfusions of 75 to 150 c.c. of citrated blood. After the initial fast infusion by means of gravity outfit with rectal drip bulb and thumb screw clamp the apparatus was regulated so as to give the child 15 to 40 c.c. per hour. The total fluid intake was calculated around two ounces per pound body weight in the twenty-four hour period. The mortality since this treatment has been instituted has dropped from 64 per cent in the last ten years to 12 per cent in this series of fifty-four cases in the same hospital.

Hartmann's solution is an excellent substitute for normal salt and Ringer's. It is used by Powers Marriot and others and highly recommended. It works well in the presence of an acidosis or alkalosis and can be diluted with twenty-five times its volume with freshly sterile distilled water. It can be given by any route that normal salt can be given and can be purchased in sterile ampoules and diluted just before being given. Glucose can also be readily given with this.

In those cases which run a high toxic temperature and you are far in the country without ice or electricity, a fairly efficient cooling apparatus can be made from a five gallon tank, an iron pipe or rubber hose closed at one end and perforated with fine holes, and two muslin or canvas-covered gables over the patient. The first gable fixture can be put about three feet above the patient, and the other gable six inches above this. The water drips on the upper covered gable just fast enough to evaporate before running off on to the bed, and the evaporation uses up heat from the compartment between the two gables, thus cooling the air. Cool air, being heavy, falls and envelops the patient, keeping the surrounding air cool. Sometimes this may be life-saving.

In desperate cases where the patient is far from the office and you cannot handily match the bloods and transfusion is urgently indicated, I see no reason why a small micro-transfusion, given into the subcutaneous tissue as often as necessary, would be contra-indicated when taken from one of the parents. I have given convalescent whole blood in 50 c.c. quantities on several occasions in this way. In the presence of a good circulation, I believe the results would be good. Small transfusions could be given daily in this way. The transfusion of whole blood, as alluded to above, were given in an epidemic of measles as a preventive measure, but I have never given it in other indications.

References

1. Marriot: Infant Nutrition.
2. Durand: Progress in the Nutrition of Infants. *Jour. Amer. Med. Asso.*, Vol. 99, No. 4.
3. Karelitz and Schick: Treatment of Alimentary Toxicosis, *J. A. M. A.*, Vol. 99, No. 5.

OPEN SAFETY PIN IN ESOPHAGUS OF MONTH OLD BABY: CASE REPORT.

E. G. GILL, M. D., Roanoke, Va.

Patient, J. W. V., age 1 month, was referred to us on January 29, 1932, by Drs. George S. Hurt and J. M. Bishop. The parents gave a history of the child having difficulty in swallowing and crying as if in severe pain for three days. For the past twelve hours, there had been a peculiar noise made on inspiration. There was no history of aspiration or swallowing of a foreign body. The physicians in the case felt that they might be dealing with an enlarged thymus gland, but the X-ray revealed an open safety pin in the upper esophagus. At endoscopy, the point of the pin was found embedded in the under surface of the left arytenoid cartilage. The keeper of the pin was grasped and the point was disengaged, and the entire pin was removed without any difficulty. No anesthesia was used, neither local or general.

X-ray photograph showing open safety pin in esophagus of month old baby.

This case is reported as it is of interest due to the absence of a history of foreign body

aspiration. It is also interesting as to how a baby one month old could get any object in its mouth. This case clearly demonstrates the importance of X-ray plates where there is difficulty in swallowing or breathing.

Gill Memorial Eye, Ear and Throat Hospital.

Woman's Auxiliary, to the Medical Society of Va.

President—Mrs. William Lett Harris, 1112 Matoaka St., Norfolk.
President-Elect—Mrs. Joseph Bear, 3012 Monument Ave, Richmond.
Recording Secretary—Mrs. Fletcher J. Wright, 49 S. Market St., Petersburg.
Corresponding Secretary—Mrs. Charles A. Saunders. 1000 Gates Ave., Norfolk.
Treasurer—Mrs. Reuben F. Simms, 2034 Park Ave., Richmond.

Auxiliary to the Richmond Academy of Medicine.

It was with deepest regret the Auxiliary accepted the resignation of Mrs Lee E. Sutton as its president, at the January meeting. Mrs. Sutton had done excellent work during the past year and the members have a very real appreciation of her unsparing spending of her time, strength and splendid talents in behalf of the organization.

While regretting the loss of Mrs. Sutton as president, the Auxiliary has been particularly fortunate in securing the services of Mrs. James B. Dalton who was serving as vice-president with Mrs. Sutton. Mrs. Dalton is a woman of charm and splendid executive ability and we feel sure she will wear the mantle which has fallen upon her slender shoulders with credit to herself and honor to the organization she represents.

Auxiliary to Norfolk County Medical Society.

At an executive board meeting of this Auxiliary, in January, it was planned to give a Public Relations Tea, inviting the Norfolk teachers, the members of the Home and School Leagues, and members of the Woman's Club. Dr. B. B. Bagby, State Director of Child Welfare, will be the speaker on this occasion.

The members of the Auxiliary will also assist in cataloging the Medical Library.

There will be a meeting of the whole Auxiliary early in February.

National News.

Mrs. Milton P. Overholser, National Chairman of Press and Publicity, sent her news letter for December-January with the following verses by Angela Morgan, as an inspiration for the coming year:

"Work! Thank God for the pride of it,
For the beautiful, conquering tide of it,
Sweeping the life in its furious flood,
Thrilling the arteries, cleansing the blood,
Mastering stupor and dull despair,
Moving the dreamer to do and dare.
Oh, what is so good as the urge of it,
And what is so glad as the surge of it,
And what is so strong as the summons deep,
Rousing the torpid soul from sleep?
Thank God for a world where none may shirk—
Thank God for the splendor of needed work!"

Greetings for 1933

The old year is ended and the bright New Year full of possibilities for success and happiness is before us. And Oh! such opportunities for Resolutions! Not the proverbial kind, forgotten so soon, but for growth, consolidation and coordination, thus stabilizing all phases of our activities, warm friendships mellowing the memories of past years and bringing our own year to such a close as will find us more firmly established than ever in the hearts and lives of those we serve.

The poet has sung—"Oh for a day in June" and what can be lovelier than Wisconsin in June! Already our thoughts are turning Conventionward. This means Reports, and it should not be too early NOW to think of what those reports will contain. In many cities, High School students are allowed to run the various parts of city government for a day. It would provide an awakening experience if some of our members could be National officers, at least for a day. Each state has its own definite interests and problems, and each officer, especially Standing Committee Chairmen, earnestly tries to sympathetically understand and assist in their development.

In the last News Letter, Mrs. Freeman's splendid article emphasized the importance and value of *Hygeia*. Today let us turn to the importance of Public Relations. Every newspaper, as well as medical journals, has given headlines to the reports of the Committee on "The Cost of Medical Care." Who more than the Auxiliaries should carefully read, discuss and understand both the majority and minority reports, and be thoroughly familiar with their arguments and claims.

In the *Pennsylvania Medical Journal* we read

from the physicians themselves "A gradual extension of our Public Relations Activity is the only sane solution for meeting those who interfere with the evolutional progress of Medical Science." This well expresses the spirit of the Recommendations from the Committee on Public Relations through its Chairman, Mrs. A. Haines Lippincott, and her Committees which should be, and are, reaching to the individual members, for from the Auxiliary columns of the medical journals of many states, we find it has become a vital note in our education, each a committee of one carrying with them into other organizations the facts in reference to scientific medicine that should be the common possession of every citizen.

Mrs. C. R. Phillips, in her report as retiring President of the Pennsylvania Auxiliary, emphasizes the recognized importance of the place for Public Health and Educational Subjects in their past years programs, and that these same subjects have been given to other clubs and organizations by the Public Relations Chairman, thus accomplishing a fine piece of work.

An enthusiastic letter from Mrs. B. Franklin Blotz, State President of Colorada, states she had just motored to Denver, a distance of 190 miles to attend the meeting of the State Public Relations Committee and a splendid outline for the year has been prepared.

We have asked this might be considered a State Year. Assurances have come from so many of the states, too numerous to mention for fear we might omit one, that again we urge each group of State Officers to cooperate to the fullest with everyone of the National Chairmen. Your success is our success. As you grow our influence multiplies and enables us all to accomplish the things we seem to have been born to do.

Instinctively we all know what we would like to accomplish in the coming year.

Let us do it with all our might!

Faithfully yours,

Mrs. James F. Percy,

President, Woman's Auxiliary, A. M. A.

The following is a short sketch of the new National President:

Mrs. James F. Percy was born in Nebraska, went with her parents to Southern California when five years of age, and received her education in the public schools of Los Angeles. Her early activities were concerned with the development of oil interests in which her father was engaged. Part of this experience required familiarizing herself with the legal side of business practice, she lived thus in a business and legal atmosphere. She became an active worker in Women's Organizations, especially those devoted to music and the drama. In both of these pursuits she has maintained an earnest and enthusiastic interest until the present day.

Since her marriage to Dr. Percy in 1925 she entered with equal devotion into the exacting demands that usually fall to the lot of the physician's wife. Through friendship and admiration for Mrs. John O. McReynolds, of Dallas, Texas, she was attracted to the Woman's Auxiliary of the American Medical Association. Following the A. M. A. Meeting at Dallas, she resolved to try to interest the Los Angeles County Medical Association in the formation of a County Auxiliary. This resulted in her being requested to assume Chairmanship of an Organization Committee. Her first efforts met with enthusiastic support. She was elected its first President and at the end of the first year there was an enrolled membership of 474. In May, 1930, she was elected State President and at the Detroit meeting of the Auxiliary to the A. M. A. was made fourth Vice-President. This was followed at Philadelphia by the second Vice-Presidency and at New Orleans she was made first Vice-President. Because of her admiration and friendship for our late President, Mrs. Walter Jackson Freeman, and in loyalty to the Auxiliary this office was reluctantly accepted.

Mrs. Percy has a constructive love for organization work which she keenly enjoys.

Truth About Medicine

In addition to the articles enumerated in our letter of November 26th, the following have been accepted:
Maltine Company
Maltine with Mineral Oil and Cascara Sagrada.

New and Non-official Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association, for inclusion in New and Non-official Remedies:

Nostal.—Isopropyl bromallyl barbituric acid. It differs from barbital (diethyl barbituric acid), in that both of the ethyl groups of the former have been replaced, one by an isopropyl group and the other by a substituted brominated allyl group. The actions and uses of Nostal are essentially similar to those of barbital, but it is more active than barbital and is used in correspondingly smaller doses. It is marketed in the form of tablets 0.1 Gm. (1½ grains). Riedel-de Haen, Inc., New York.

Abbott's A-B-D Malt Extract with Cod Liver Oil and Viosterol 5 D.—Malt Extract, 57 per cent; cod liver oil with sufficient viosterol to adjust the antirachitic potency to 5 D, 30 per cent by volume; glycerin, 10 per cent; alcohol, 3 per cent. The finished mixture is assayed for vitamin B_1 (F) potency by a modification of the method of Sherman and Spohn and is required to contain not less than 60 units per fluidounce; it is assayed for vitamin B_2 (G) by the method of Sherman modified by the diet proposed by Munsell and is required to contain not less than 60 units per fluidounce. The cod liver oil is assayed by the method of the U. S. P. X for vitamin A and is required to contain not less than 500 units per gram; it is adjusted by addition of viosterol to contain not less than 66.65 vitamin D units (Steenbock) per gram when assayed by the method of the Wisconsin Alumni Research Foundation. The actions and uses are the same as those for cod liver oil. Abbott Laboratories, North Chicago, Ill. (Jour. A. M. A., December 3, 1932, p. 1945).

Neocinchophen—Lederle.—A brand of neocinchophen—N. N. R. It is marketed in the form of tablets 5 grains. Lederle Laboratories, Inc., Pearl River, N. Y. (Jour. A. M. A., December 31, 1932, p. 2265).

Foods

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

Melliu's Food Biscuits (Mellin's Food Company of North America, Boston).—Baked biscuits prepared from wheat flour, Mellin's Food (essentially maltose, dextrins, cereal protein and minerals and potassium bicarbonate), cane sugar, oleomargarine and sodium bicarbonate. Biscuits intended for children passing from an infant's diet to more substantial nutriment and for invalids.

Merck's Banana Powder (Northjohn Corporation, Lincoln, N. J., manufacturer; Merck & Co., Inc., Rahway, N. J., distributor).—Spray dried ripe bananas retaining enzymes and vitamins in accordance with the following approximations: vitamins A (100 per cent), B (100 per cent), C (20 per cent) and G (100 per cent). It is intended for table use of bananas, the preparation of banana milk drinks, as a carbohydrate supplement for infant and iuvalid feeding, and as an adjunct in special diets.

Squibb Chocolate Flavored Vitavose (E. R. Squibb & Sons, New York).—A powdered mixture of sucrose, Vitavose (extract of malted wheat germ and U. S. P. malt), cocoa, skim milk and lactose; vanilla flavored; contains vitamins B and G. It is claimed to be intended especially for the carbohydrate, food iron and vitamins B and G supplement of milk. (Jour. A. M. A., December 17, 1932, p. 2113).

Mellin's Food (Mellin's Food Company of North America, Boston).—A dried extract produced by an infusion of wheat flour, wheat bran and malted barley admixed with potassium bicarbonate; essentially maltose, dextrins, proteins and mineral salts for the modification of milk for infants aud invalids.

Propaganda for Reform

The Zifferblatt Hay Fever Treatment.—Iu May, a Philadelphia newspaper published an article with the headlines: "Hay Fever Stayed by Discovery Here. New Inhalant Immunizing Patient to Ravages of Disease Announced." The article opened with the statement that Philadelphia, long noted as a center of medical science, had added another triumph to her achievements by the discovery by one of her research workers, Dr. Arnold H. Zifferblatt, of "a 100 per cent successful treatment for hay and grass fever." Summed up, the situation seems to be: that Dr. Zifferblatt and his associates claim to have developed a treatment for hay fever that will give permanent relief for the season; (2) that no information regarding this treatment has been published in medical literature, but the widest publicity has been given it through the daily press; (3) that the composition of the drugs used and the methods of administering them are admittedly secret; (4) that at least a proportion of the public is being charged for this secret treatment, which is admittedly in the experimental stage. (Jour. A. M. A.,

Mouth Washes and Gargles.—The Council on Dental Therapeutics of the American Dental Association, founded and organized after the manner of the Council on Pharmacy and Chemistry of the American Medical Association, has begun to secure order in the complex and difficult field in which it works. Among the most recent of its publications is a consideration of the subject of mouth washes. The Council on Dental Therapeutics feels that the usual run of mouth washes are not medicines in any sense of the word and really serve no more intrinsic purpose than as an aid in the mouth toilet in the removal of loose food and debris. While the Council does not specifically attack the claims made for any widely advertised mouth wash, it does point out that the claim that a mouth wash removes mucin films is too remote to warrant serious consideration, which is, of course, a direct thrust at the claims made for such products as Mu-Sol-Dent. It continues with the asssertion that the same statement applies to neutralization of mouth acidity; and to halitosis, which is a specific indictment of the advertised claims for such preparations as Listerine and Pepsodent. Before investing money in any of these toilet articles, therefore, the medical profession, the dental profession and the public will do well to realize the limitations of the products so far as concerns their value for the prevention and treatment of disease. (Jour. A. M. A., July 23, 1932, p. 310.)

The Scott Tissue Questionnaire.—The results of an investigation by the A. M. A. Chemical Laboratory and the Bureau of Investigation of the charges made by the Scott Paper Company that two out of three toilet papers of 660 brands tested had been found unsafe and unfit to use, proved conclusively that there was no basis for any such charge. Now the medical profession is being circularized by one Henry Legler, who writes on stationery that carries no name but does have the address, Room 1018, at 420 Lexington Avenue, New York City (which appears to be a storage room for the Scott Paper Company's advertising agency). In the combined letter and questionnaire that Legler sends to physicians, he states that he is "making a study of inferior toilet tissues and their relation to health for the Scott Paper Company" and inquires whether in their experience they have found that injury to mucous membranes may be caused by inferior toilet paper, what characteristics in the paper itself would be responsible for these troubles, and what qualities they consider most desirable in toilet tissue. Few physicians indeed have had experience enabling them to express a scientific opinion on either of the first two questions; the third question, of course, any physician could answer; so could any intelligent layman. (Jour. A. M. A., July 30, 1932, p. 393.)

Koremlu. The Chicago *Tribune*, of Sunday, July 17, 1932, issued the statement that a voluntary petition in bankruptcy was filed by Koremlu, Inc., depilatories, of 11 West 42nd Street, listing liabilities of

$2,448,745 and assets at $2.93. There seems to be accumulating evidence, however, that the individuals, or at least some of the individuals, who have been connected with the exploitation of Koremlu as a depilatory have decided that there is too much money to be made in the depilatory business to abandon it, even if dozens of women have been injured by their old product. There is now appearing on the market an alleged depilatory called "Croxon," which emanates from the same office as that of Koremlu. Croxon, Inc., was brought into existence January 29th, this year, and the president of the concern is said to be one A. W. Lublin.

According to an advertisement, Croxon "will permanently destroy both hair and roots in three to six months." Even though we are not yet in a position to publish the complete composition of Croxon, it is our opinion that Croxon will not destroy both hair and roots, either in three months or three years. (Jour. A. M. A., July 30, 1932, p. 407.)

"Ray-X Water—Liquid Sunshine."—Quacks, faddists and others are familiar with the fact that if people could be persuaded to drink more water, their health would be improved and many minor indispositions ameliorated or removed, and capitalize it by putting on the market drinking water that is alleged to have been subjected to some mysterious hocus-pocus that has endowed it with health-giving properties. One of the latest "patent medicines" of this type is called "Ray-X Water—Liquid Sunshine." It is put out by the Ray-X Water Corporation, 333 Twentieth St., Toledo, Ohio. The Ray-X Water Corporation is at the same address and has the same telephone number as an outfit known as the Blankmeyer Radionic Corporation, which puts out a fantastic piece of electro-medical hokum called the "Radiatoximeter." This device is described as the "New Super-Radionic Instrument" that will locate and treat disease without asking any questions and is positive in its findings! The Ray-X Water Corporation has for its president one A. R. Hartzog, an unlicensed chiropractor who has been in the courts at various times for violation of the medical practice act of the State, and for its vice-president and secretary, E. E. Blankmeyer. Mr. Blankmeyer is reported to be also vice-president and secretary of the Blankmeyer Radionic Corporation, a concern which has claimed to have reduced the diagnosis and treatment of disease to a mechanical certainty. The only information given in the printed matter regarding the composition of Ray-X is: "Ray-X is 100 per cent Pure distilled water subjected to a very powerful series of RAY treatments. These treatments, besides making it absolutely free from all impurities, impregnate it with certain properties and retains them in solution." This would indicate a very pretty tie-up. A man suffering from some chronic condition is persuaded through a newspaper advertisement to have his condition diagnosed by a preposterous piece of mechanical quackery known as the Radiatoximeter. He is then passed on to the exploiters of Ray-X Water, who share the offices of the Radiatoximeter outfit. (Jour. A. M. A., August 6, 1932, p. 492.)

Vitamin and Mineral Content of Dried Vegetables.—The Committee on Foods reports that to be acceptable, dried vegetables, either powdered or in other form, shall retain in highest degree possible with effective manufacturing methods, the vitamin and mineral content of the raw vegetables. Products with materially reduced vitamin or mineral content may be accepted, provided they are accompanied by labels and advertising prominently and appropriately declaring the vitamin or mineral content with respect to that of the natural vegetable used. (Jour. A. M. A., August 13, 1932, p. 562.)

Book Announcements

Clinical Gynecology. By C. JEFF MILLER, M. D., Professor of Gynecology, Tulane University School of Medicine; Chief of the Department of Gynecology of Touro Infirmary; Senior Visiting Surgeon, Charity Hospital, New Orleans. Cloth. 560 pp. C. V. Mosby Co. Price, $10.00.

This book is a companion volume to the author's "An Introduction to Gynecology." It deals exclusively with therapeutics, though diagnosis is also considered in those diseases in which an early and prompt recognition of the condition is at least as important as its treatment.

Several points stand out clearly and forcefully in this work. It is apparent on every page that the author writes from a rich experience. He is one of the outstanding gynecologists in America and a born teacher. The book is encyclopedic in its discussion of the treatment of gynecologic diseases and it is contained in 560 pages, including the index. A clear and captivating style makes it easy reading. He has the ability of giving an extended and complete picture in a few words without any sacrifice to brevity. As an example, the chapter on Endocrine Therapy gives a complete working exposition of the subject and is contained in thirteen pages. A very attractive feature is the Bibliography at the end of each chapter. It is not padded and contains references that are most worth while if further investigation is desired.

It is divided into three parts: Part I, Gynecological Diseases and their Treatment; Part II, Therapeutic Measures in Gynecologic Disease; Part III, Operative Gynecology.

It is particularly adapted to students but makes also an excellent desk book for the gynecologist and practitioner.

Charles R. Robins, M. D.

Synopsis of Gynecology. By HARRY STURGEON CROSSEN, M. D., F. A. C. S., Professor of Clinical Gynecology, Washington University Medical School, Gynecologist in Chief to the Barnes Hospital and the Washington University Dispensary, etc., and ROBERT JAMES CROSSEN, M. D., Instructor in Clinical Gynecology and Obstetrics, Washington University School of Medicine, etc.,

227 pp., 110 illustrations. C. V. Mosby Co. Price, $2.75.

This book is based on the textbook, Diseases of Women, by the same authors. It takes cognizance of the fact that the extension of medicine into various specialties and the development of all of the branches of medicine has produced such a mass of literature as to make it impossible for the medical student. This is for two reasons, first that there is not sufficient time to read all the full textbooks, and second, the cost is prohibitive. For the student who expects to specialize in a particular branch, detailed study of that branch is, of course, necessary, but all students should have a practical familiarity with the whole subject of medicine. Books of this character make this possible and attention should be paid to these difficulties. This book marks a big step in advance in meeting present conditions. It is of a convenient size to carry in the pocket, and therefore permits ready reference on the wards when the case is being studied. It covers the whole subject put in an abbreviated way. It is illustrated by a number of line drawings that clarify the text and are readily understandable.

It is to be hoped that this is only one of many books that will be furnished students of medicine with the same objects in view.

CHARLES R. ROBINS, M. D.

Annual Report of the Surgeon General of the Public Health Service of the United States. For the Fiscal Year 1932. United States Government Printing Office. Washington. 1932. Octavo of 199-vi pages. Cloth. For sale by the Superintendent of Documents, Washington, D. C. Price, $1.00.

This report states that the general health of the people of the United States as reflected by mortality rates has been maintained at a very high level during the last two and one-half years of unfavorable economic conditions.

A new low record was established for tuberculosis, reports from forty-five States giving an aggregate tuberculosis death rate of 66.3 per 100,000 population, as compared with 68.8 per 100,000 population in 1930. In 1931 there was a sudden drop in the incidence of smallpox as compared with preceding years. The typhoid fever case rate was 21.4 per 100,000 and the death rate 4.6. During the first six months of 1932 the incidence of typhoid fever increased, 5,900 cases being reported, as compared with 4,500 cases during the corresponding period of 1931 and 5,600 cases in 1930. The pellagra death rate, based on reports from forty-six States, was 6.2 per 100,000 in 1929, 5.9 in 1930, and 4.8 in 1931. In the year 1930 the lowest diphtheria death rate (4.9 per 100,000) was registered. In 1931 the rate rose to 5.0 per 100,000. Neither cholera nor yellow fever appeared in the United States during the year. No case of plague was reported in continental United States during 1931 or the first six months of 1932.

The Sex Technique in Marriage. By ISABEL EMSLIE HUTTON, M. D., London, England. Physician to the British Hospital for Functional, Mental and Nervous Diseases; Physician-in-Charge at the Ellen Terry Home at Reigate in Surrey. Foreword by IRA S. WILE, M. D., Former Commissioner of Education, New York City; Associate in Pediatrics, Mt. Sinai Hospital, etc. Emerson Books, Inc. New York 1932. 160 pages. With illustrations. Cloth. Price, $2.00.

A simple and lucid treatise which can be recommended for those contemplating marriage, especially women. Contraception is discussed only in a general way.

R. J. MAIN.

Office Surgery. By FENWICK BEEKMAN, M. D., Visiting Surgeon, Bellevue Hospital; Visiting Surgeon, Hospital for the Ruptured and Crippled, etc. Everyday Practice Series. Edited by Harlow Brooks, M. D. J. B. Lippincott Company. Philadelphia and London. 1932. Octavo of 402 pages. With 94 illustrations. Leather. Price, $5.00.

Cancer and Sarcoma One; Identical in Cytology; Cell Division. By FRANK A. STAHL, M. D. Rush, 1887. One time Volantar, Frauen Klinik, Munich; Demonstrator of Obstetrics, Rush Medical College, Chicago, Ill. Pamphlet of 60 pages. Illustrated.

Infants and Children. Their Feeding and Growth. By FREDERIC H. BARTLETT, M. D, Director of the Department of Pediatrics, Fifth Avenue Hospital, New York City. Farrar & Rinehart, Inc. New York. 1932. 424 pages, complete index. Price $1.50 net.

Radiologic Maxims. By HAROLD SWANBERG, B. Sc., M. D., F. A. C. P., Editor, The Radiological Review; Radiologist, St. Mary's Hospital and Blessing Hospital, Quincy, Ill., etc., With a Foreword by HENRY SCHMITZ, A. M., M. D., LL. D., F. A. C. R., F. A. C. S., Professor of Gynecology and Head of the Department, Loyola University School of Medicine, etc. Radiological Review Publishing Company. Quincy, Illinois. 1932. 12mo. of 127 pages. Cloth. Price, $1.50.

Methods and Problems of Medical Education. Twenty-first Series. The Rockefeller Foundation. New York. 1932. Pamphlet of 226 pages. illustrated.

Proceedings of the Twenty-sixth Annual Convention of the Association of Life Insurance Presidents. Held in The Waldorf-Astoria. New York. December 8 and 9, 1932. Octavo of 280 pages. Paper.

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Editorial

Intrahepatic Jaundice.[1]

For years clinical medicine has recognized the frequency and importance of diseases of the liver. In many of the patients afflicted with digestive disturbances the liver plays a part. In many of the patients with the history of focal or systemic infections, the liver, its bile system or gall-bladder, plays a part. In many patients with a life-long history of obesity and excessive food consumption, the liver plays a part. In many patients with history of gall-bladder operation, the liver and bile radicals play a part. In the rare patients, in more recent years it is recognized, the liver plays a serious part from the over use of cincophen and other drugs.

Following infections like syphilis and more acute infections like streptococcic-sore-throat, the liver may be the site of complications of a major degree bringing to the fore liver symptoms easily recognized, but following in the wake of the above group of disease conditions there are signs of liver damage and liver pathology of a far less characteristic and spectacular nature not so easily recognized and yet of significance in the matter of health and well-being.

Snell[1] has recently directed attention to this subject observing that essential pathologic changes in the intrahepatic types of jaundice are quite the same regardless of what the etiologic factors may have been. He also notes that liver damage occurs and may proceed to degenerative changes. While in some instances healing may and does occur, chronic hepatitis results not infrequently. There may be extensive parenchymatous degeneration. Acute or subacute yellow atrophy may result. There may be in a small group processes of destruction and regeneration at work simultaneously: putting on the form of portal cirrhosis but with more rapid progress. Such patients have been said to have a sort of toxic cirrhosis. Then following primary lesions, the liver may be inherent—either healing, chronic progressive hepatitis, toxic cirrhosis or atrophy.

From the standpoint of jaundice in such cases, intrahepatic jaundice may be grouped as (1) infectious or toxic jaundice, (2) spirochetal jaundice, (3) toxic jaundice, due to drugs or poisons, such as cincophen, arsenic, chloroform, iodo-oxy-quinoline sulphonic acid (yatren), mushrooms, alcohol, etc., and (4) toxic jaundice from systemic diseases, such as exophthalmic goitre or toxemia of pregnancy. Besides, one must keep in view jaundice from portal cirrhosis and obstructive biliary states. Clinically the infections and toxic forms of jaundice are painless but are characterized by loss of appetite, some nausea or vomiting and general weakness and loss of weight. There may be general itching of the skin. The icterus varies. There may be an orange or saffron caste to the skin. Urine of these patients contains smaller quantities of bile in proportion to the values for bilirubin in the blood than is found in obstructive jaundice, says Snell. Stools are seldom acholic for any time. In

1. Clinical Varieties of Intrahepatic Jaundice. A. M. Snell. Proceedings of the Staff Meeting of the Mayo Clinic, December 21, 1932, page 731.

35 per cent of cases, however, acholic stools have been observed at times. In duodenal drainage bile is found and may be normal. Splenic enlargement in 25 per cent of such cases has been observed while the gall-bladder is rarely felt and the liver is often enlarged unless atrophy has ensued. Pruritis is inconstant and mild. In the laboratory one may find some help. Hypocholesteremia is one significant finding. The study of the galactose tolerance is another test of interest. The value of bilirubin in the blood streams are important. In more acute stages, high values for bilirubin are common. A rapid decline occurs as improvement takes place. In acute or subacute, yellow atrophy terminal or high values are not uncommon. In general, summarizes Snell, if bile passage is potent, very high values for serum bilirubin are strong evidences of the presence of a toxic or infectious hepatic lesion.

In recent years drugs such as cincophen or arsenic have been observed to produce such liver damage. Toxic jaundice may be associated with systemic disease in toxemia of pregnancy and certain forms of sepsis.

Standard Tests of Liver Function.[2]

For a number of years tests for liver function have been appearing in medical publications. Long recognized as a complex organ with varied functions, the effort to find a test of functions of the liver by laboratory methods have met with criticism but with some success. Now it is the general practice in laboratory investigation of suspected liver disease to employ several methods and to check one test against another test with clinical history and findings. In cases of liver or bile tract surgery, such methods of study of liver function, it has been desirable to evaluate the amount of liver damage by the employment of these tests. In instances when the tests disclosed poor function, dietary and remedial measures have been instituted and improved values in liver function have been obtained before operation. By this method, it has been possible, it is thought, to lower the mortality of such operations and to improve the chances of patients for a speedy recovery. Robertson, for instance, quoting Laird, Brugh and Wilkerson, states that "functional studies afford data that make the diagnosis of cholecystitis cases, the handling of these cases while in the hospital, and the prognosis of final results, more a matter of information and not so much a mere guess."

In view of these observations and in view of the widespread incidence of biliary tract infections of one sort and another, it would seem not out of place to call attention to the subject of the test of liver function and to cite the excellent articles, noted in footnote, as a reference for extended and careful reading by practitioners of medicine. It is probably true that many patients are getting symptoms from damaged and diseased liver without the cause of such symptoms being suspected and explained. One has only to recall the frequency of gall-bladder disease and biliary tract infection and the frequency of operations therefor to recognize the strong probabilities of such obscure etiologic factors in illness.

Our readers may find in the conclusion of Robertson's article a fair statement on the value of the several liver function tests. *Icterus Index* remains one of the most valued tests of liver function. It is simple; it is less time consuming and less prone to error than are some others. In its employment carrots should be eliminated from the diet as a possible source of error in performing the test.

The *van den Bergh test*, says Robertson, offers another test which rarely offers any advantage over the icterus index; and as the technic of the latter is more simple, it is more practical.

Bromsulphthalein gives a dye that may be employed in detection of liver damage through dye retention findings. The authors feel that the icterus index and this dye test are most frequent in agreement with the clinical picture. Besides this there is the *Galactose Tolerance Test*. In spite of negative estimations, these authors feel that this test has a definite place in the field of diagnosis. The long used *Urobilinogen*, except in few instances like malignancy, was not relied upon and was not given high place as a test of liver function. These authors describe their clinical work in a series of liver cases and reach their conclusions from these investigations. Discussion following this paper reinforces the importance of such tests in all cases of biliary tract surgery. Its perusal indicates keen interest aroused by the subject and emphasizes the plan in diagnostic investigation of liver cases that liver function tests have attained.

2. Functional Capacity of the Liver. W. E. Robertson, et als. J. A. M. A., December 17, 1932, page 2071.

Early Diagnosis of Brain Tumor.*

A paper that comes forward with the plea for the early diagnosis of brain tumors merits the wide interest such a problem presents. Practitioners may infrequently be called upon to consider such problems, but nevertheless in general practice such cases are more and more being discovered. It becomes urgent, therefore, for the general practitioner to look with keener discrimination into brain symptoms. Such symptoms are very common. Patients complain of headaches and vomiting and, maybe, blindness. Symptoms of dizziness, of apathy, of drowsiness demand discriminative investigation. One must remember that in brain tumor symptoms may become acute in slow growing tumors—headache, tenderness, and choked disk in about 60 to 80 per cent, nausea, vomiting, abducens nerve paralysis, convulsions, dizziness, bradycardia—are a few of the probable signs. Static or even cerebellar ataxia (third and fourth ventricle tumors) in noncerebellar tumors, paralysis of limbs (with large tumors not in motor area) and certain mental symptoms (in third ventricle tumors) as drowsiness, apathy, retardation of thought and movement, euphoria, certain roentgenographic findings and spinal fluid findings as slight increase in number of cells and increase in protein content are added points in the inquiry of diagnosis in brain tumors. The author presents in his paper illustrative cases citing the history and clinical findings with the purpose of emphasizing the various conditions and difficulties. While neurologists and neurosurgeons in the last stages may with alertness of diagnosis and experience pick out such cases, the practitioner will need to exert the keenest interest in his general reading in order to discern the significance of early symptoms of brain tumors. It must be acknowledged that the presence of headache, vomiting and choked disk are not prerequisite for diagnosis of brain tumor, although such a grouping usually is associated with this condition. Besides, generalized convulsions, jacksonian epilepsy, drowsiness, and stupor must arouse the most searching inquiry and early consultations.

*Osnato's paper. J. A. M. A., December 10, 1932, page 2012.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Foreword.

Spring will soon be here and, with it, we hope there will be the desire of many of our component societies to join with this Department in developing more fully the idea of postgraduate instruction. The advantages which will come as a result of this work are numerous, and, of these, the incentive to pursue our studies further is probably the most helpful.

A good library for reference and use would be of inestimable value to the Society in contributing to the cause for which this Department is striving. At the mid-winter meeting of this Department an effort will be made to work out the best way of making this library available to the profession throughout the State.

We are hoping to start a course on Pediatrics in the near future, as this seems the most popular subject desired by those who have taken Dr. Lapham's course, and there is probably no other course that would be as helpful to the general practitioner.

R. D. Bates, M. D.,
Chairman.

Sixteen Classes in Prenatal Care Finished.

The third circuit of five post-graduate classes conducted by Dr. Maxwell E. Lapham, of Philadelphia, full-time clinician of the Joint Committee on Prenatal and Postnatal Instruction, came to a close in the last week of January. These classes were located in Roanoke and adjacent cities. One new enrollment during the month, that of Dr. G. A. L. Kolmer, brought the membership for the circuit to a total of fifty-two. The attendance for the first part of the course was somewhat better than the records of previous circuits; and it remained creditable to the end, in spite of the disadvantages of the holiday intermission, rough weather, and the busyness of the season.

As in previous classes, every enrolled member was invited to give the Joint Committee the benefit of his frank opinion as to the value of the course and his suggestion for further improvement. The replies received at the time of writing have been unanimous, with a single exception, in stating that the course was worth the cost in time and money—twenty-three affirmative to one opposed; and that similar

courses in other subjects would be welcomed—twenty-five affirmative to none opposed.

In its first nine months the Joint Committee has now completed sixteen classes with a total enrollment of 228. Of this number only six have been doubtful of the value of the work, and only six have indicated their lack of interest in future educational opportunities.

The fourth circuit of classes in and around Norfolk, as described below, and an intensive course of two weeks already arranged for Bedford in April, will end the year's work. The organization of additional study groups for the summer in the most distant sections of the State will be immediately undertaken.

Tidewater Classes Begin Strong.

Unanimous votes in approval of the courses in prenatal and postnatal care by the medical societies of Norfolk, Nansemond and Southampton Counties, and the application of members of the (colored) Norfolk-Portsmouth Medical, Dental and Pharmaceutical Society, have resulted in a more favorable beginning for the fourth circuit than in any previous groups of classes. Active committees on membership and clinical material and an advance enrollment of fifty-one are indications of the success that may be confidently expected in the new territory.

Details of the meetings of the fourth circuit ten days before the organization week are as follows:

Suffolk: The class meets on Mondays, beginning January 30th, at 3:00 P. M., probably in the Public Health rooms. Local committee in charge of membership and clinical material: *Chairman*, Dr. E. C. Joyner, Drs. Rea Parker, J. L. Rawls. *Enrollments:* Drs. L. L. Eley, W. C. Gibson, G. G. Holland, H. H. Hunter, E. C. Joyner, Rea Parker, J. Lewis Rawls, F. I. Steele, G. H. Warren, O. R. Yates.

Franklin: The class meets on Tuesdays, beginning January 31st, at 2:00 P. M. in the Rotary dining room of the Stonewall Hotel. *Enrollments:* Drs. J. N. Applewhite, W. T. McLemore, R. L. Raiford.

Portsmouth: The class meets on Wednesdays, beginning February 1st, at 8:00 P. M. in King's Daughters Hospital. *Local committee:* Dr. E. W. Rawls. *Enrollments:* Drs. J. W. Abbitt, F. P. Barrow, J. H. Branan, V. A. Brooks, R. L. Corbell, T. Elmore Jones, V. J. Meads, J. C. Phillips, E. W. Rawls, A. J. Russo.

Norfolk: The class meets on Thursdays, beginning February 2nd, at 2:00 P. M., at first in the auditorium of James Madison School, Hampton Boulevard and 38th Street. *Local committee:* Chairman, Dr. C. J. Andrews, Drs. H. W. Rogers, M. B. Savage, Wallace Spigel, T. N. Vorbrinck. *Enrollments:* Drs. C. J. Andrews, Mallory S. Andrews, T. L. Brooks, A. M. Burfoot, J. L. Deitrick, Elliott D. Floyd, W. S. Hadley, M. N. King, P. St. L. Moncure, Richard H. Peake, H. W. Rogers, M. B. Savage, W. Tilden Smith, T. M. Vorbrinck, P. E. Thornhill.

Norfolk (for colored physicians): The class meets on Fridays, beginning February 3rd, at 4:00 P. M. in the Norfolk Community Hospital. *Local committee:* Chairman, Dr. U. S. G. Jones, Dr. E. D. Burke. *Enrollments:* Drs. D. W. Byrd, E. D. Burke, J. T. Canaday, C. R. S. Collins, A. C. Fentress, G. H. Francis, S. I. Moone, U. S. G. Jones, E. W. Murray, J. L. Sapp, A. J. Strong, F. R. Trigg and J. Q. A. Webb.

The Commonwealth Fund Reports.

Members of the Medical Society of Virginia will be interested in the evaluation of its program of prenatal and postnatal instruction by the Commonwealth Fund, whose generosity has made it possible for the Society's Joint Committee to establish post-graduate classes in every section of the State where they are desired. The extract below from the recently issued annual report of the Commonwealth Fund is an encouraging summary of the project.

"Only one entirely new item appears in the list of such [special] grants for the year. This is an appropriation of up to $10,000 to meet the major part of the cost of extension teaching in obstetrics arranged for Virginia physicians by a committee representing the State Medical Society, the Medical College of Virginia, and the University of Virginia. It is common knowledge that recent advances in the scientific care of expectant mothers and in the technique of delivery and postpartum care have found their way all too slowly into general practice The cordial partnership between the two medical colleges and the state professional organization in Virginia offered the best possible augury for a productive attack on this problem in that state. The plan has been set up in a way which makes it easy for the physician, on payment of a nominal fee, to attend classes and to secure competent clinical consultation. A young obstetrician with experience in the excellent hospitals of Philadelphia does the teaching, and the extension department of the State university takes responsibility for making the opportunity known to rural and urban physicians throughout the State. The response has been quick and enthusiastic; a large percentage of the physicians practicing in the

area where courses have been given have attended them; and one Negro group has been successfully organized. The result should be genuine improvement in this most important field of general practice, and many of the physicians who have taken the course have expressed interest in similar instruction in pediatrics and other subjects."

GEO. W. EUTSLER,
Secretary Joint Committee.

Proceedings of Societies

Virginia State Board of Medical Examiners.

As a result of the examinations held in Richmond in December, the following were licensed to practice medicine in Virginia:

Dr. William Carlisle Barr, Jr., Washington, D. C.

Dr. Joshua Jack Grizzard, Jr., Winston-Salem, N. C.

Dr. Russell F. Hufford, Parkersburg, W. Va.

Dr. Robert B. Phillips, New York, N. Y.

One chiropodist was also granted a license.

The next examinations of the Board will be held in Richmond, June 21-23, 1933.

Lynchburg Academy of Medicine, Inc.

At a meeting of the Academy, held in Lynchburg, on January 2nd, Dr. James Morrison was elected president in place of Dr. Sam Wilson, and Drs. John Hundley, Jr., F. O. Plunkett, J. Henry Rawlings and George T. Harris were elected members of the board of trustees of the Academy. The applications for membership of Drs. H. H. Hurt, William T. Pugh and T. N. Davis, Jr., were favorably voted upon.

It was decided that the February meeting would be given over to a discussion of the Report on the Costs of Medical Care, and a committee was instructed to study the report and bring in recommendations at that meeting.

Dr. John Hundley, Jr., is secretary-treasurer.

The Roanoke Academy of Medicine

Held its regular meeting at the Elks Club, Roanoke, Va., on January 2nd, at 8:30 P. M. This meeting was devoted to papers on Industrial Surgery and the following were presented:

When To Take X-Rays—Dr. Roy M. Hoover.

When To and When Not To Give Tetanus Antitoxin Serum—Dr. H. Heyward Wescott.

Gas Gangrene Antitoxin—Dr. Hugh H. Trout.

Emergency Treatment in Industrial Surgery—Dr. T. D. Armistead.

Future of Industrial Surgery—Dr. W. R. Whitman.

Discussion on these papers was opened by Drs. J. T. McKinney, T. J. Hughes, W. Banks Huff, and Fred Davis, after which there was a general discussion by members of the Academy and visiting doctors.

The Piedmont (Va.) Medical Society

Held a joint meeting with the Albemarle County Medical Society on December 8th, in the amphitheater of the University of Virginia Hospital. Dr. Percy Harris, of Scottsville, presided, and Dr. W. E. Bray, University, was at the secretary's desk. There was a registered attendance of fifty-one, and, in addition, a number of students were present. Dr. G. R. Elliott, Orange; Dr. A. M. Smith, Charlottesville, and Dr. R. V. Funsten, University, were elected to membership. The following papers were read:

Appendicitis: Observations of the Country Doctor—Dr. J. N. Clore, Madison;

The Survival of the Family Physician—Dr. Roy K. Flannagan, of the State Department of Health, Richmond;

The Use of Adhesive in Acute Orthopedic Conditions—Dr. R. V. Funsten, University.

A paper on Lung Abscess, by Dr. I. A. Bigger, of Richmond, was read by title, as he was unable to attend on account of illness.

Following this program, supper was served about 6:00 P. M., in the grill room at Farmington Country Club.

The Southside Virginia Medical Association

Held its regular quarterly meeting in Petersburg, Va., December 13th, under the presidency of Dr. W. W. Wilkinson, of La Crosse. A very attractive program was presented and all papers read were freely discussed. There was a large attendance and at the close of the scientific program, the visiting doctors were entertained at a delightful dinner by the Petersburg members. Several new members were

elected. Officers elected for 1933 are: President, Dr. D. C. Mayes, Church Road; vice-presidents, Dr. Leta J. White, Petersburg; Dr. F. N. Mallory, Lawrenceville; Dr. J. Lewis Rawls, Suffolk; Dr. Joel Crawford, Yale; secretary-treasurer, Dr. R. L. Raiford (re-elected), Franklin. The Executive Committee for the coming year will be composed of Drs. E. L. Kendig, Victoria; J. E. Rawls, Suffolk, and C. S. Dodd, Petersburg. The Nominating Committee includes Drs. L. S. Early, Petersburg; T. F. Jarratt, Jarratt, and F. N. Mallory, Lawrenceville.

After what was considered one of the best meetings in the history of the organization, the Association adjourned to meet at Central State Hospital, Petersburg, on the second Tuesday in March.

News Notes

The Tri-State Medical Association of the Carolinas and Virginia

Is to hold its annual meeting in Greenville, S. C., February 13th, 14th and 15th, under the presidency of Dr. C. A. Shore, of Raleigh, N. C. The secretary, Dr. J. M. Northington, Charlotte, N. C., reports that much interest is being manifested in the meeting and a large attendance is expected.

News from University of Virginia, Department of Medicine.

The meeting of the University of Virginia Medical Society was addressed on December 12th, by Dr. Thomas V. Williamson, of Norfolk, Va., on the subject of Granuloma Inguinale.

On December 27th Dr. J. F. Brock, Leverhulme Scholar at the Royal College of Physicians in London, and Dr. James Baker, of The Thorndyke Memorial Laboratories in Boston, spent the day at the Medical School.

Dr. Dan Elkin, Professor of Surgery at Emory University, served as visiting Professor of Surgery during the week of January 9th-14th.

Dr. Carl Ten Broeck, Director of the Rockefeller Institute for Animal Diseases at Princeton, N. J., visited the Medical School on December 5th.

At the meeting of the University of Virginia Medical Society on January 9th, Dr. J. Shelton Horsley, of Richmond, Va., spoke on Indigestion, Its Causes and Treatment.

News Notes Medical College of Virginia.

Dr. Cyrus Sturgis, professor of medicine at the University of Michigan held a clinic for the junior and senior classes of the College January 10th.

For the calendar year the outpatient department of the College showed 59,709 patient visits as compared with 47,842 for the year 1931, an increase of 11,867. This increase is more than half of the total visits made to the outpatient department for the fiscal year 1925-26.

A tabulation of articles written by members of the faculty of the school of medicine of the College and published during the year 1931 in medical journals has been made by Dr. E. C. L. Miller, directing librarian, and shows sixty articles were contributed during the year.

The board room of the college in the new library is to be known as the "Founders' Rooms," and will house portraits of the six founders of the College and articles of professional and personal interest which once belonged to them. Much progress has been made on assembling portraits and articles as descendants of the founders have been very cooperative. The College has not been able to get in touch with any of the descendants of Dr. Augustus L. Warner, first dean of the institution, nor of Dr. Thomas Johnson, first professor of anatomy and physiology.

Recent alumni visitors to the College were Dr. W. E. Bundy '08, Dr. W. H. Flickinger '17, and Dr. B. D. Bosworth '32.

Shortly a bulletin will be mailed featuring the College library and offering its service to the profession either in person or by mail. The library facilities many think should be more widely extended and be more widely used than at present.

The first bequest to be made in a will by a colored person to any unit of the institution was that of Harriet Johnson who bequeathed

$234.00 to the Saint Philip Hospital among her gifts to other institutions for the welfare of her people.

News from the Duke University School of Medicine.

The winter quarter of the medical school began January 4, 1933, with forty-nine students in the first year class, sixty in the second year and fifty-five in the junior-senior class. Four of the senior students completed their medical course December 23, 1932. Two seniors are taking their elective quarter at hospitals in London, England, and Dublin, Ireland, and several others are taking their elective work at other hospitals in this State.

Married.

Dr. David Lemuel Harrell, Jr., and Miss Katie Mae Moore, Lynchburg, Va., January 9th. Dr. Harrell is a graduate of the class of '30, Medical College of Virginia, and is at present a member of the staff of the State Epileptic Colony.

Dr. and Mrs. P. B. Barringer,

Charlottesville, Va., celebrated their golden wedding anniversary on December the 27th, at which time seven of their nine children were with them. The two unable to attend were in foreign countries. Dr. Barringer was former chairman of the University of Virginia faculty and formerly president of the Virginia Polytechnic Institute, Blacksburg, Va.

Dr. Paul J. Parker,

Hampton, Va., was recently named coroner of Elizabeth City County, succeeding the late Dr. Geo. K. Vanderslice.

On Board of Directors of Kiwanians.

Drs. George H. Reese and Philip Jacobson, Petersburg, Va., were recently installed as directors of the Kiwanis Club of that city.

The Annual Congress on Medical Education, Licensure and Hospitals

Will be held at the Palmer House, Chicago, on February 13 and 14, 1933. Matters of vital importance to American medicine will be considered at this time—contract practice, regulation of specialists, enforcement of practice act, and what shall be done with the 1,500 American students soon to be graduated from European Medical Colleges and returned to the United States for licensure and practice. Many of these students were too low-grade to qualify for entrance to our Class A colleges and are sub-standard products.

Railroad rates to Chicago may be had on the certificate plan—one and one-half fare for the round trip—provided 150 non-resident delegates are present.

Dr. Thomas J. Crowe, Dallas, Texas, is president of the Federation, and Dr. Walter L. Bierring, Bankers Trust Bldg., Des Moines, Iowa, is secretary.

Spring Graduate Course.

The Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Va., will conduct its Seventh Annual Spring Graduate Course in Ophthalmology, Otology, Rhinology, Laryngology, Facio-Maxillary Surgery, Oral Surgery, Bronchoscopy and Esophagoscopy, April 3-8, 1933.

Resident members of the faculty ars Drs. E. G. Gill, John A. Pilcher, Jr., and Mr. Nathan Ridgeway, all of Roanoke, and Dr. J. B. Nicholls, Catawba Sanatorium. The guest members are Dr. W. W. Weeks, New York City; Dr. Ralph I. Lloyd, Brooklyn, N. Y.; Dr. David W. Wells and Dr. Lyman Richards, both of Boston, Mass.; Dr. E. B. Burchell, New York City; Dr. Robert F. Ridpath, Philadelphia, Pa.; Dr. Joseph C. Beck, Chicago, Ill.; Dr. John R. Page, New York City; Dr. C. C. Coleman, Richmond, Va.; Dr. H. S. Hedges, Charlottesville, Va.; and Dr. M. F. McCarthy, Cincinnati, Ohio.

All lectures, demonstrations, and operations will be given at the hospital. There will be round table discussions given at the Patrick Henry Hotel each day immediately following lunch, at which those registered will be guests of the Hospital.

Full information with regard to this course may be obtained from the Superintendent, Gill Memorial Eye, Ear and Throat Hospital, Box 2467, Roanoke, Va.

Dr. Karl Blackwell,

Richmond, Va., was elected president of the local alumni chapter of the Kappa Alpha fraternity, at its annual meeting in January.

Doctors Among Bank Directors.

Names of the following doctors were noted as bank directors in the lists published in January: Dr. A. W. Lewis, Ayletts; Drs. Granville Eastham and D. W. Kelly, Culpeper; Dr. D. Lane Elder, Hopewell; Dr. Reid White, Jr., Lexington; Drs. E. G. Brumback and Loring Hammer, Luray; Dr. H. A. Spitler, Middleburg; Dr. Hunter Williams, North Garden; Dr. Charles S. Dodd, Petersburg; Drs. R. D.

Garcin and Roshier W. Miller, Richmond; Dr. B. C. Shuler, Shenandoah; and Drs. L. M. Allen, C. R. Anderson and Hunter H. McGuire, Winchester.

Correction.

Dr. R. H. Garthright, of Vinton, Va., has brought to our attention an error in the Correspondence appearing on pages 614-615 of the January issue of the MONTHLY. The name published as "Alexander H. Stevenson" should be Alexander H. Stephens.

Dr. A. Stephens Graham,

Of the class of '25, University of Virginia, Department of Medicine, has located in Richmond, Va., with offices at 503 Medical Arts Building, for the practice of surgery and surgical diagnosis, and has been appointed visiting surgeon to Stuart Circle Hospital. After graduation, he interned in Virginia Mason Hospital, Seattle, Wash., and then entered the Mayo Foundation as a Fellow in Surgery. In 1930, he received the degree of Master of Science in Surgery from the University of Minnesota, with which the Mayo Foundation is affiliated. He was then active as an assistant surgeon in the Mayo Clinic until October, 1932, except for a period of four months when he visited European Clinics under the auspices of the Mayo Clinic. He was made a Fellow of the American College of Surgeons last Fall.

Dr. Mason Romaine,

Petersburg, Va., has returned home after a European trip and resumed his duties as health officer of that city.

The Southeastern Surgical Congress

Announces its fourth annual assembly at the Atlanta Biltmore Hotel, Atlanta, Ga., March 6, 7 and 8, 1933.

The following prominent surgeons and internists will appear on the program:

Dr. Tom G. Orr, Kansas City—The Essential Factors in the Treatment of Acute Peritonitis.
Dr. Walter E. Sistrunk, Dallas—Subject to be announced later.
Dr. C. W. Roberts, Atlanta—Subject to be announced later.
Dr. George W. Crile, Cleveland—Peptic Ulcer—Lantern Slides.
Dr. W. G. Haggard, Nashville—Toastmaster.
Dr. Chevalier Jackson, Philadelphia—Diverticula of the Esophagus and Hypopharynx. Lantern and Motion Picture Demonstration.
Dr. Charles Bagley, Jr., Baltimore—Subject to be announced later.
Dr. W. E. Lower, Cleveland—The Various Functions of the Testes; an Experimental and Clinical Report.
Dr. Hugh Cabot, Rochester—Subject to be announced later.
Dr. Hubert A. Royster, Raleigh—Sidelights on the Pathology of Appendicitis.
Dr. E. W. A. Ochsner, New Orleans—The Relative Value of Sclerosing Agents in the Treatment of Varicose Veins.
Dr. Dean Lewis, Baltimore—Muscles, Nerve and Blood Vessel Injuries of the Extremities.
Dr. Carl A. Hedblom, Chicago—The Diagnosis and Treatment of Tumors of the Thorax.
Dr. W. Wayne Babcock, Philadelphia—The Vaginal Approach to the Peritoneum.
Dr. W. R. Houston, Augusta—Subject to be announced later.
Dr. Curtice Rosser, Dallas—Problems Confronting the Proctologist.
Dr. Irvin Abell, Louisville—Tumors of the Breast.
Dr. Robert Wilson, Charleston—The Fundamentals of Surgery—a Medical Viewpoint.
Dr. Cecil Rigby, Spartanburg—Subject to be announced later.
Dr. Russell O. Lyday, Greensboro—Surgical Progress from a Physiological Standpoint.
Dr. Vilray P. Blair, Dr. James Barrett Brown, St. Louis—Cancer of the Mouth.

Clinics will be held also. The complete program will be mailed out about February 15, 1933. In the meantime, prepare to attend. Dr. B. T. Beasley, 1018 Doctor's Building, Atlanta, Ga., is secretary-treasurer.

Virginia Councilman of Southern Medical Association.

Dr. R. Finley Gayle, Jr., Richmond, has been appointed member of the Council of the Southern Medical Association from Virginia for a regular Council term of three years, the appointment having been announced recently by the President, Dr. Irvin Abell, Louisville, Kentucky. Dr. Gayle succeeds Dr. A. L. Gray, of Richmond, deceased.

Dr. J. L. Tabb,

Associate of the late Dr. A. L. Gray, announces that he will continue the practice of roentgenology at their former office, 300 Medical Arts Building, Richmond, Va.

The American Board of Obstetrics and Gynecology

Proposes to hold the first of a series of annual dinners for Diplomates of the Board and their friends on the first day of the Scientific Session of the American Medical Association, meeting in Milwaukee, at which time the successful candidates from the examination of the day before will be introduced in person, one or more addresses will be made by officers of the Board, and a Round Table Conference and general discussion of the activities of the Board will follow. Diplomates expecting to

be in attendance at the Scientific Session of the American Medical Association are urged to make reservation for this subscription dinner as early as possible through the office of the Secretary of this Board. Further announcements will be made through the *Journal of the American Medical Association* and the *American Journal of Obstetrics and Gynecology.*

The next written examination and review of case histories will be held in cities throughout this country and Canada, where there are Diplomates who may be empowered to conduct the examination, on April 1, 1933.

The next general, clinical examination is to be held in Milwaukee on Tuesday, June 13, 1933, immediately preceding the annual session of the American Medical Association. Reduced railroad rates will apply.

For further information and application blanks, address the Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pa.

Dr. Brewster Arthur Hopkins,

Of the class of '29, Medical College of Virginia, and recently connected with the staff of Central State Hospital, Petersburg, Va., has located at Stuart, Va., where he will be engaged in general practice.

"The Little Journal"

Is the new house organ of the S. M. A. Corporation, which they are publishing from their headquarters at 4614 Prospect Avenue, Cleveland, Ohio. They expect to send this to pediatrists. The first number, issued in January of this year, contains a number of trite sayings and several clever short articles. We found this first number very interesting.

Information About the National Institute of Health.

The National Institute of Health, under the control of the Surgeon General of the United States Public Health Service, was created in 1930 as a result of legislation fathered by Jos. E. Ransdell, then a United States Senator from Louisiana. It is an enlargement of the old Hygienic Laboratory, and is the scientific research center of the Public Health Service. Its function is to ascertain the cause, prevention and cure of diseases affecting human beings.

The Secretary of the Treasury was authorized to accept gifts for research in problems relating to the health of man. Although the financial support for research work has been comparatively small in the past, Government scientists have made extremely valuable discoveries concerning many diseases.

The Public Health Service, of which the National Institute of Health is a division, has done excellent work since its creation in 1798. The decrease in the death rate, which has increased the average expectancy of life from 49 years in 1900 to 56 years in 1925, an increase of 18 per cent is due to a large extent to the medical and dental professions and the Public Health Service.

Dr. John Bruce James,

Class of '31, Medical College of Virginia, will sail on March 4th for Paris where he will be located at the American Hospital for a year. His wife and son will accompany him. Dr. James will devote most of his time to the study of neuropsychiatry and endocrinology.

The Clifton Springs Sanitarium and Clinic,

Clifton Springs, N. Y., announces the appointment of Dr. Adrian S. Taylor as superintendent and surgeon-in-chief. Dr. Taylor is a native of Mobile, Ala., and a graduate of the University of Virginia, Department of Medicine, in 1905. He has spent several years in China as a surgeon and teacher, and has been engaged in the practice of surgery in Birmingham, Ala., since 1927.

Dr. Paige E. Thornhill,

For twenty years a practicing physician of Watertown, N. Y., has recently located in Norfolk, Va., with offices in the Wainwright Building, where he is continuing his work in the field of obstetrics and gynecology. During the World War, he was for nearly two years in France. In 1921, Dr. Thornhill obtained a four months' internship on an unexpired service in Long Island College Hospital, Brooklyn, under the late John Osborn Polak, since which time he has limited his work to obstetrics and gynecology. He became a fellow of the American College of Surgeons in 1929. He was secretary of his County Medical Society at the time he left Watertown and was a past president of his District Society and had served for two years as a member of the Council of his State Society.

Dr. Andrew D. Parson,

Who has been located at Raven, Va., since 1920, went to Tulane University the first of the year for additional post-graduate work in urology. Upon his return, he will locate in Richlands, Va.

Achievements in Medicine Dramatized in New Radio Series.

On January 8th, the House of E. R. Squibb and Sons presented the first of a series of half hour radio programs in keeping with the splendid traditions of its founder.

This half hour of entertainment is on the air every Sunday over the Red Net Work of the National Broadcasting Company Chain, at 4:30 P. M., New York time. It features Frank Black and his Orchestra, the Revelers, and as the high spot a dramatization of gripping moments from the history of medicine.

These presentations of music and interesting dramatic episodes are designed to appeal to almost every type of radio listener. The announcements emphasize that only through a sufficient number of properly trained physicians can a community expect to meet its responsibility for the care and prevention of illness and the protection of health. Impressive reasons are also mentioned as to why the use of the family doctor is a good way to keep down the costs of competent, sympathetic and understanding general medical care.

Dr. R. L. Page.

Batesville, Va., was installed as chaplain of King Solomon's Lodge, No. 194 A. F. and A. M., at its stated meeting in January.

Dr. Charles W. Tucker,

Drakes Branch, Va., has been elected chairman of the Charlotte County Board of Supervisors for the coming year.

Dr. and Mrs. C. C. Smith,

Norfolk, Va., were at home to their friends on the evening of January 10th, in celebration of their tenth wedding anniversary.

Dr. Curtis G. Power,

Of the class of '31, Medical College of Virginia, who interned at the Charleston General Hospital, Charleston, W. Va., recently located at Martinsburg, W. Va., for general practice. He has offices in the Reliance Life Building.

Diabetes.

This magazine made its first appearance with the November, 1932, issue and will be published monthly. It is stated that while there are two German periodicals on this subject, this is the first in the English language. It will be the aim of the management to have the magazine contain practical articles on diet, treatment and general subjects of importance to those suffering from diabetes and it is promised that the articles will be by eminent authorities, written in a non-technical manner. Offices are at 1841 Broadway, New York City.

Dr. Mary E. Roche,

Norfolk, Va., announces her change of address from Medical Arts Building to 910 Wainwright Building, that city.

The Pan-American Medical Association

Will hold its fourth congress in Dallas, Texas, March 21st-25th, under the presidency of Dr. John O. McReynolds of that city. Dr. Jose E. Lopez-Silvero, of Havana, Cuba, is executive secretary.

Obituary Record

Dr. Kirkland Ruffin,

Prominent physician of Norfolk, Va., died December 25th, after an illness of almost seven years. He was sixty-seven years of age, and graduated from the University of Virginia, Department of Medicine, in 1886. He was associated with Dr. Lomax Gwathmey in the founding and operation of St. Christopher's Hospital. Dr. Ruffin was a past president of the Norfolk County Medical Society and the Seaboard Medical Association. He had been a member of the Medical Society of Virginia for forty-four years. He is survived by his wife, two daughters and two sons, one of whom is Dr. Willcox Ruffin, of Norfolk.

On the day we celebrate the birth of our risen Lord there was fulfilled for Dr. Kirkland Ruffin the promise "I will come again and receive you unto myself that where I am there ye may be also."

"For such as he there is no death;
His life the eternal life commands;
Above man's aims his nature rose:
The wisdom of a just content
Made one small spot a continent,
And turned to poetry life's prose."

One of the truly great surgeons of our time, he has left the imprint of his mind and heart on the profession to which he devoted his life. His character was not of the type that reaches its highest expression in any ceremonial piety, but of the type manifest in service to and love for his fellowman.

RESOLVED BY THE STAFF OF THE NORFOLK PROTESTANT HOSPITAL, That we pay tribute to the character and attainments of Dr. Ruffin, and that we gratefully acknowledge his services to us and to this Institution.

RESOLVED FURTHER, That copies of this testimonial be recorded on our minutes and published in the VIRGINIA MEDICAL MONTHLY.

H. S. BAKER,
W. B. MARTIN,
L. F. MAGRUDER,

The members of the NORFOLK COUNTY MEDICAL SOCIETY wish to express their deep sense of loss at the passing of Dr Kirkland Ruffin, on December 25, 1932.

To the entire profession here, for many years, he

has been an example of all that a conscientious practitioner of medicine should be. His large number of personal followers turned to him for assistance when in doubt and always found his counsel of benefit. His criticism was gentle and rarely left a sting.

Even after several years' retirement from active practice his host of patients felt a sense of personal loss when they knew that their Dr. Ruffin was no more. His professional service they had learned to do without but the memory of his kindness and his skill in administering to them still remains. His time-taking care and his consideration of the poor who came to him for help were always a source of inspiration to those who watched him work. Time was no object with him and the ability of his patient to pay was not a consideration. Through all of his life he lived up to the highest ideals and teachings of the Medical Profession.

We wish to take this opportunity to express to the members of his family our appreciation of his life and our privilege in knowing and working with him.

JULIAN L. RAWLS,
CHAS. R. VANCE,
N. G. WILSON,
Committee.

Dr. James Henry Culpepper.

Your committee wishes to acknowledge with profound sorrow and deep heartfelt regret the death of our beloved member, Dr. James H. Culpepper. Both the community and entire medical profession have lost one of its most valuable members.

Dr. Culpepper graduated from the Norfolk Academy and, after devoting two years to academic and literary studies at the University of Virginia, he began the study of medicine at the University of Virginia in 1901 and at the completion of the freshman year transferred his medical credits to the University of Pennsylvania and there received his degree of Doctor of Medicine in June, 1905. After an internship of about two years Dr. Culpepper began the practice of medicine and surgery in Norfolk where his career was marked by steady advancement due to his intrinsic professional qualifications and his unusual ability to make steadfast friends with all who came in contact with him. Not only was he a capable and finished surgeon but possessed the rare insight which made him a thorough internist and capable diagnostician.

Dr. Culpepper served as President of the Norfolk County Medical Society, as President of the Seaboard Medical Association and Medical Director of the Norfolk Protestant Hospital. He was a member of the Medical Society of Virginia, a Fellow of the American Medical Association, a Fellow of the American College of Surgeons and a Fellow of the Southern Surgical Association. Words can but fail to express our love and admiration for Jim Culpepper. His optimism and courage for the past seven years have been a source of constant wonder and inspiration to all his professional associates. Every one of us marvelled at the enthusiasm, the industry and energy of this great but physically handicapped man. One marvelled at his diagnostic skill, his practical grasp on both surgical subjects and business problems and one delighted in the kindliness of his sweet and sincere disposition and his philosophy of life which was of such a broad understanding.

He will be missed and mourned by countless number of grateful patients, loyal friends and devoted colleagues. Life to Dr. Culpepper was synonomous with service and achievement. He was one of God's noblemen whose presence inspired confidence and trust.

THEREFORE BE IT RESOLVED, That in the death of Dr. James H. Culpepper, the Norfolk County Medical Society has sustained an irreparable and never-to-be-forgotten loss;

BE IT FURTHER RESOLVED, That a page in the minute book of this Society be set aside and dedicated to his memory and that a copy of these resolutions with expression of our deepest sympathy, be presented to his family and to the VIRGINIA MEDICAL MONTHLY.

B. R. KENNON,
E. A. LAND,
R. L. PAYNE,
Committee.

Dr. Culpepper died Christmas Day, 1932, at the age of fifty years. He was born in Portsmouth, Va., and was the son of Dr. and Mrs. Vernon G. Culpepper. He is survived by his wife, one son, his mother and a sister, Mrs. Stanley H. Graves, of Norfolk.

Dr. Carter Weisiger

Died at his home in Cumberland, Va., December 30, 1932, in his fifty-eighth year. He was born in Richmond, Va., and educated in the public schools of that city, after which he entered the University College of Medicine in 1893, graduating in 1896 in the first class that went through that institution. He practiced a short time at Fork Union, Va., and, following the death of Dr. Fuqua at Cumberland, moved to that county where he practiced his profession for more than thirty years, serving as county physician and coroner for a number of years. He was a member of the Medical Society of Virginia for more than thirty-five years, a Past Master of Cumberland Lodge No. 283, A. F. & A. M., and a member of the Methodist Church. He is survived by his mother, sister and three brothers, among them Dr. W. R. Weisiger, of Richmond. Interment was in Maury Cemetery, Richmond.

Dr. Martin L. Dalton,

Well known physician of Southwestern Virginia, died at his home at Montvale, Va., on January 2nd, death being due to bronchopneumonia following influenza. Dr. Dalton was fifty-six years of age and graduated from the former University College of Medicine, Richmond, in 1899, and later took post-graduate work at the New York Post-Graduate Hospital. Twenty-five years of his professional life was spent at Floyd, Va. He was a member and past-president of the Southwestern Virginia Medical Society and had been a member of the Medical Society of Virginia since 1901. Dr. Dalton is survived by his wife, four children, two sisters and two brothers, Drs. J. B. Dalton, of Richmond, and H. A. Dalton, of Carroll County, Virginia.

Dr. Charles Mason Smith,

City Health Officer of Fredericksburg, Va., died suddenly January 2nd, following a long period of ill health. He was fifty-one years of age and graduated in medicine from the University of Virginia in 1907. Dr. Smith had been a member of the Medical Society of Virginia for twenty-three years. His wife and two daughters survive him.

Dr. Richard Huckstep Holt,

Of Middleburg, Va., was asphyxiated, January 2nd, when the muffler of his car became immersed at he attempted to ford a river near Leesburg, Va. He was thirty-four years of age and a graduate of the University of Virginia, Department of Medicine, in 1925. Dr. Holt is survived by his wife and one child.

Dr. Henry Clary Beckett,

Chase City, Va., died January 11th, after a brief illness. He was born in Giles County, Va., in 1851, and received his medical degree from Vanderbilt University, Nashville, Tenn., in 1884. Dr. Beckett practiced in Scottsburg, Va., for thirty-three years before locating at Chase City. He had been a member of the Medical Society of Virginia for forty-seven years. His wife and four children survive him.

Dr. Joseph D. Rogers,

Washington, D. C., died January 12th after an illness of more than a year. He was born at Hamilton, Va., in 1880, and graduated in medicine from the George Washington University in 1900. Dr. Rogers was coroner of the District of Columbia and head of the Casualty Hospital in Washington. He had been a member of the Medical Society of Virginia since 1913 and was corresponding secretary of the Medical Society of Virginia, Maryland, and the District of Columbia for a number of years.

Dr. Ferdinand Mitchell Perrow,

Formerly a member of the Medical Society of Virginia, died at his home, Lynchburg, Va., January 19th, after an illness of some time. He was a native of Campbell County, Va., and fifty-eight years of age. He graduated in medicine from the University of Virginia in 1902 and later from the University of Pennsylvania, after which he practiced in Lynchburg until forced to retire on account of bad health. His widow and a son survive him.

Resolutions on Death of Dr. Gray.

Alfred Leftwich Gray died October 12, 1932, aged fifty-nine years. When he chose Medicine as his profession, he began his citizenship in the world of Science and learned to think its thoughts. His vision of Medicine as a life work was a broad one and he ever maintained a more than casual interest in all that concerns the human body in health as well as in disease; so much so in fact that in his early life he studied extensively and taught several of the fundamental branches of medical science.

It was the unknown ray, however, which early attracted his attention and aroused in him a special interest, and he became a pioneer in Roentgenology as an important aid to diagnosis and a valuable therapeutic agent. He excelled in its technique and interpretation to an extent which won for him national recognition as an authority, and the fame thus attained caused him to be widely sought as a consultant. His eminence was attested by his elevation to the presidency of the American Roentgen Ray Society.

As a physician Dr Gray was beloved by those who sought his advice and skill, because of that gentleness of character, human sympathy, spirit of optimism and quiet humor which so endeared him to all who knew him. Among his colleagues of the medical profession, he was affectionately known as "Monk" from his student days, and he was sure of a hearty welcome in any gathering of members of the profession, whether of a deliberative or social nature, where his geniality and joviality made him the center of admiration.

His passing deprives the members of his special group of Roentgenologists, of an able counsellor, for he was always willing to give of his time and of himself to those who needed his advice. He was generous to a degree rarely seen, with his wealth of experience, whether for the benefit of a less experienced colleague, or of humanity, or for the advancement of the science of Roentgenology.

The members of the Virginia Roentgen Ray Club, therefore, feel his loss in a peculiar sense and wish to record their affection and esteem for Alfred Gray as a scientist and friend and say to him in farewell:

"This earth that bears thee dead,
Bears not alive so stout a gentleman."

Be it Resolved, That this memorial be published in the Virginia Medical Monthly and that a copy be sent to his bereaved family.

V. W. Archer,
H. B. Spencer,
Wright Clarkson,
Committee.

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Vol. 59, No. 12.
WHOLE No. 969.

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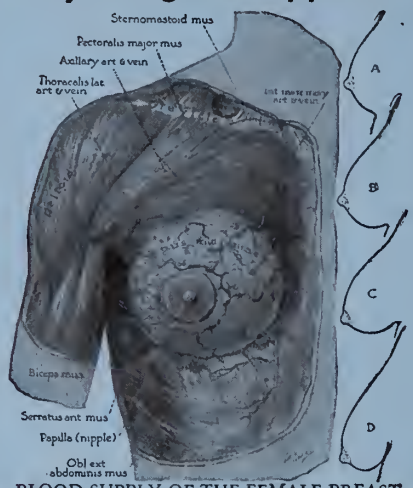

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PRENATAL AND POSTNATAL INSTRUCTION: A REPORT OF WORK BEING CONDUCTED BY THE MEDICAL SOCIETY OF VIRGINIA.*

M. E. LAPHAM, M. D., Field Clinician,
Medical Society of Virginia.

After six months of active work in giving post-graduate instruction in prenatal and postnatal care to physicians in their own locations, it might be well to review the methods of teaching which have been used, in an endeavor to justify the means. The course to each group consists of a didactic lecture on what seems to be the more important subjects in obstetrics and gynecology from a practical standpoint.

Following the lecture, an informal discussion takes place, the interest in which varies according to the groups. The discussion becomes more active as the course progresses. One realizes that discussion is only valuable when limited to the subject matter, and an attempt is made to prevent too detailed reminiscences on the part of the men. However, if a man is willing to admit past mistakes, I believe it is a valuable method of impressing approved methods. I find many men who ask questions about recent developments in subjects pertaining to the course, and many who have read about the subject of the lecture before coming to the meeting. I try to tell anyone who is interested where further reading matter can be found on the subject.

Many men admit during the discussion their carelessness in prenatal work, as well as some unscientific habits such as inadvised use of pituitrin and frequently done vaginal examinations under poor aseptic technique. In some cases physicians try to get by with procedures which are known to be bad, simply because there seems to be no untoward results in most cases, but they do not take into consideration the ill effects the pernicious practices have on a few patients. An endeavor has been made to impress the men with the importance of doing routine, careful work before, during and after delivery, so that the small minority of patients who are bound to have complications will not suffer. I find that many points during discussion are made impressive if I insist upon adhering to well-founded rules in obstetrics, and especially if some of the men in the class admit that by not adhering to certain rules they have had bad results. I do believe that a great number of the men try to do careful obstetrics when possible, but they say that they are handicapped by poor cooperation of the patients and by inadequate facilities for proper technique during delivery.

The questions are continually asked how more careful prenatal work can be done and how the economic problem can be overcome. Many patients do not go to a doctor because they do not have the money for the prenatal visits. I have advised the institution of the practice of charging a flat fee for prenatal work, delivery and postnatal care. This seems the most logical way of getting patients to go to a doctor early in pregnancy since they know it won't cost any more. Added to this suggestion that the patient pay a small amount at each prenatal visit, so that the fee will be entirely paid or nearly paid by the time of delivery, seems to be a good way to obviate the difficulty of collecting the whole charge subsequent to delivery.

The remaining time in each locality is given over to personal instruction and consultation. This to my mind is a very valuable part of the instruction and a method by which the instructor comes in closer contact with the physicians and can consequently be of greater service to them. None of us are infallible, but we do not like to admit ignorance of pertinent subjects in public. As I become better acquainted with the men, they are willing to ask

*Read at the sixty-third annual meeting of the Medical Society of Virginia, in Richmond, November 1-3, 1932.

for personal instruction and consultation, and then admit that they have not done certain routine measures either because of lack of knowledge, lack of time or because of carelessness. When it has been pointed out the short time it takes to do a careful physical examination, including pelvimetry and pelvic examination, and the importance of having a history to refer to at all times, then most men admit the rationale of doing careful work not only for the good it does the patient but because it is a way to improve one's practice.

An effort has been made to instruct all the classes, as well as individuals, in pelvimetry, interpretation of pelvic findings and other obstetric procedures, many of which were not taught when some of the older men attended medical school, and through carelessness have never been made a part of their routine practice since, even though they realize their importance. Printed prenatal and postnatal instructions, as well as obstetrical history blanks, have been given out in an effort to impress more careful work.

Clinical demonstrations to the classes have been satisfactory and helpful when patients were available. The repetition of routine examinations has been used and, although boring at times perhaps, the assigning of different men to do the work has been beneficial to them, and I hope has impressed them with the importance of routine obstetric work.

The early diagnosis of pregnancy has been stressed in these clinics, and I have fortunately had several patients to demonstrate the early symptoms and signs of pregnancy. I have resorted to the Zondek-Aschheim test for early diagnosis, using the Friedman rabbit test modification frequently, not only for diagnosis of pregnancy but for differential diagnosis and the attempted diagnosis of dead fetus. I have also instructed several men in the technique of the procedure so that it could be used routinely or as consultants called for its use. It seems that this has demonstrated the importance of early diagnosis and may lead to more careful, early prenatal care.

Finally, as far as the teaching is concerned, the mimeographed copies of the lectures have been distributed at the end of each day and the men seem to read them and ask for copies if they have been absent. Many of them tell me that they do not have time to read a great deal, and the printed lectures give them in condensed form things that they might never have read.

The reaction to the course in general has been satisfactory, which is probably best shown by the continued attendance. There have been criticisms, for which I have asked, the major one being the lack of clinical material. However, different groups have admitted their laxity in not obtaining patients, since the Committee stipulated that the instructor was not allowed to interview patients without the consent on request of the family physician. This difficulty has been obviated in some localities by getting the consent of the class to use patients who are being seen by midwives. Many of the cases were subsequently referred to physicians because of some complications. I am sure if the local physicians put forth some effort an abundance of patients could be procured. The instructor is unable to relieve the situation further, and a great deal depends upon the interest of the local organizing committee.

The didactic work has not been criticized particularly, although some men have suggested that the plan of procedure and management of obstetric cases, as outlined, calls for ideal conditions, but I insist that careful, clean and even operative obstetrics can be done in the home as well as in the hospital. The fact that I have stressed various complications has not been done so much to outline the treatment as it has to prevent their occurrence.

I have tried to make the point, as well as has the organizing committee, that my time is available for consultation during the entire day I am in a locality, especially to instruct the men in any procedures mentioned in the lectures or to explain some of the complications arising during the puerperal state. No attempt has been made to see patients without the request of the physician, and only then when he states that my presence will not supplant a local consultant. Most of the visits have been to patients who would not have had a consultant anyway.

There has been a marked interest shown in some of the newer ideas in obstetrics such as the Zondek-Aschheim test for pregnancy, methods of analgesia during labor, treatment of toxemias, and in office gynecologic diagnosis and treatment.

It is difficult to estimate the value of such a course only in so far as interest is shown

at the time and in the desire for individual instruction. The ultimate good, if any, will only be shown in time. In the past five months 141 clinic patients have been examined and 103 patients have been seen in educational consultation.

Suggestions for improvement of the course which might be mentioned include such things as having time allotted to each man for instruction or consultation, only of course if this plan met with approval of the group. Only a few patients, however, can be seen in the one day and usually I am not asked to see patients until after lectures—which gives me only a very limited time for consultation work.

The purchasing of a manikin for demonstration purposes has been asked by a few men. The question of the benefit as against the expense might not justify such a purchase.

The development of a library service so that literature can be available for the men who desire it has been suggested. I carry two journals with me and smaller pamphlets on prenatal care and advice, but probably the best way would be to arrange for loans of literature from the medical libraries of the State.

Justification for continuance of the work seems to be shown by the request for further work in this branch by several of the groups as well as for courses in other branches of medicine.

Discussion

Dr. Greer Baughman, Richmond: I shall say just a word. I was one of Dr. Lapham's pupils and should like to report what a member of the class here in Richmond felt about it. I am, of course, vitally interested in this plan of teaching. We are feeling our way, trying to find whether it is the right way to reduce maternal and infant morbidity and mortality. I talked to a good many men, and the reports from the men who attended the class with me were most satisfactory. The members of the class in Richmond have been rather faithful; about twenty-five or thirty (pretty much the same men; maybe ten or fifteen change back and forth), were very constant in attendance on this course. I think I express the feeling of the men when I say that the course was very satisfactory and very helpful. I always expect to get something out of a discussion, but just one little point I got I feel was well worth my five dollars. That was Dr. Lapham's method of handling breasts.

I should like to hear an expression of opinion from some of the men who have attended the course in different parts of the State.

Dr. A. E. Turman, Richmond: I had the pleasure of attending this class, and it was very satisfactory. Fortunately, I was able to attend all the lectures, and I never attended any that I felt I got more out of.

Dr. H. B. Sanford, Richmond: I had the pleasure and the honor of listening to this fine lecturer in his practical discourses on prenatal work and postnatal work. The part in which I was very much benefited was where he would call my attention to practical, common-sense things and impress upon me the importance of doing these every-day, common-sense things. One was to shave the patient. Really, every doctor that practices among poor people ought to carry with him his razor, his bedpan, his gloves—and, for Heaven's sake, make good, common-sense use of them.

This doctor impressed on us that we must not make vaginal examinations unless there is some special reason for it. Defer them as long as possible, and make other examinations—rectal, for instance, and external, to find out how the case is progressing.

These little specific things, while they may not mean so much, in a sense, yet they are vital; and these important, common-sense things, from the time the patient becomes pregnant until she is delivered, will keep off trouble; and I feel very grateful to him, and so does the class, for having had him with us and for calling our attention to these important points.

Dr. J. Bolling Jones, Petersburg: I am here to speak for the group that we organized in Petersburg At the time it was organized I think there was some question in the minds of the men in the rural districts as to what this course meant and how it was going to affect them. We had, on an average, about twenty men at each meeting. I have never seen, I think, any more interest manifested in any group than in the one we had—that one at Petersburg. Personally, I was delighted with the course. It is marvelous, gentlemen, how much we can forget of things that we really know and how things escape us. This course has taught me how important it is to keep abreast. I would go to a lecture thinking that maybe I would not get much out of that one, and when the Doctor would get through I would be glad that I had been there. I think it is one of the best things that has been offered the medical profession of Virginia.

PENETRATING WOUNDS OF THE THORAX.*

I. A. BIGGER, M. D., Richmond, Va.

Wounds of the thorax may be described as penetrating or non-penetrating, the distinction depending upon the question of entrance into the thoracic cavity. In non-penetrating wounds there is usually no subcutaneous emphysema and no evidence of injury to the lung such as air or blood in the pleural cavity. In penetrating wounds some of these conditions are usually present. Non-penetrating wounds are rarely important, so this discussion is limited to penetrating wounds.

Summary of Cases

Of the eighty-four patients with wounds of the thorax admitted to the Medical College of Virginia Hospitals during the past two years, forty-nine had penetrating and thirty-five non-penetrating wounds. Eight of these involved

*From the Department of Surgery, Medical College of Virginia. Read at the sixty-third annual meeting of the Medical Society of Virginia, in Richmond, November 1-3, 1932.

the pericardium and intra-pericardial structures. Of these eight patients, one had an injury of the pericardium alone, five of the pericardium and heart, one of the pericardium, heart, and pulmonary artery, and one of the pericardium and superior vena cava. The patient with an injury to the pericardium alone entered the Saint Philip Hospital about thirty minutes after being shot through the left chest. He was moderately shocked, and auscultation over the pericardium revealed a splashing sound with each heart beat. X-ray examination showed a slight degree of pneumopericardium, which indicated that the pericardium had been injured. He recovered under conservative treatment. Three of the five patients with injury to the heart and pericardium had stab wounds. These were operated upon and the wounds sutured, and all of them recovered. Another was shot through the left chest and left upper abdomen, the bullet entering the left hemothorax through the fifth interspace just outside the nipple line, passing through the pericardium, apex of the heart, lower lobe of the left lung, diaphragm, spleen, and left kidney. It did not enter the cavity of the ventricle nor injure a branch of the coronary artery, so the cardiac wound probably had little to do with his symptoms. He died forty-eight hours after admission and autopsy showed a massive hemorrhage in the left pleural cavity. The other patient with injury to the pericardium and heart had a segment two inches in length shot out of the left border of the left ventricle. The wound in the ventricle communicated with the left pleural cavity through a large opening in the pericardium, and the patient died from hemorrhage while an attempt was being made to repair the wound. The patient with stab wounds of the pericardium, heart, and pulmonary artery was operated upon and the wounds in the heart and pulmonary artery sutured. He died fifty-four hours later and autopsy revealed a bilateral pulmonary atelectasis, which apparently caused his death. The patient with a stab wound of the pericardium and intrapericardial portion of the superior vena cava recovered following repair of the wound.

Sixteen patients had injury to the lung, while in thirty-three the condition of the lung either was normal or could not be determined because of associated conditions in the pleural cavity. Twelve patients with penetrating wounds appeared to have normal pleural cavities both on X-ray and physical examination. Fourteen patients showed hemothorax, three pneumothorax, and twenty showed hemopneumothorax. Aspiration was necessary in only ten of these. Twenty-six patients showed subcutaneous emphysema.

In three patients with large sucking wounds, repair was done and all recovered. Six patients had injuries to the larger vessels of the chest wall. Five of them had the internal mammary artery divided and all of them recovered following its ligation. One had a partial division of a posterior intercostal artery as well as an injury to a large pulmonary vessel. The branch of the pulmonary artery was ligated; but the patient's condition was such that a careful exploration was impossible and the injury to the intercostal artery was overlooked, so the patient died from hemorrhage. Of five wounds of the diaphragm, two caused by bullets were untreated, with one death and one recovery. Of three stab wounds, one was sutured, with recovery; two were untreated, with recovery in one case and death from hemorrhage from the right lobe of the liver in the other. In this entire series there were three infections of the chest wall and two empyemas. One of the patients with empyema recovered, but the other developed a lung abscess also, from the retention of a bit of clothing in the lung, and died.

Discussion

An accurate knowledge of both the anatomy and physiology of the thoracic organs is essential for anyone treating penetrating wounds of the thorax. Anatomy, of course, is important in determining the structures which may be injured, especially when the wound is in the region of the mediastinum. The pericardium and heart are more frequently injured than the other structures because of their size and anterior position. Wounds of the pericardium alone are of little importance unless followed by pericarditis, which is rare.

Formerly, wounds of the heart were usually fatal. Within recent years operations for repair of heart wounds have become more frequent and the mortality rate has decreased, now apparently being less than 50 per cent. Stab wounds and puncture wounds of the heart are more amenable to repair than those made by bullets. It is, of course, essential that these patients be operated upon early, for if the wound in the pericardium communicates with the

pleural cavity, the patient will die of hemorrhage; whereas, if the wound in the pericardium acts as a valve, the intra-pericardial pressure will increase rapidly and will cause circulatory failure when it reaches the level of the intra-auricular pressure. Wounds of the great vessels are rare, and this is fortunate, as they are usually fatal, although not necessarily so. If the intra-pericardial portion of one of the great vessels is injured, the symptoms and signs are similar to those produced by heart wounds; while if the extrapericardial portion is injured, death from hemorrhage is apt to occur before medical aid can be obtained.

In treating penetrating wounds of the pleural cavity one has to bear in mind the negative intra-thoracic pressure and the low pressure in the pulmonary circulation. The negative intra-thoracic pressure is important in that it tends to increase hemorrhage, especially when there is an injury to one of the vessels of the chest wall. This was true of one of the patients here reported in whom there was an injury to one of the large vessels in the lung and a partial division of one of the posterior intercostal vessels. At operation one of the large intra-pulmonary vessels was ligated, but the patient's condition prevented careful search of the pleural cavity and a bleeding intercostal vessel was overlooked, with the result that the patient died of intra-pleural hemorrhage. It is entirely possible that if the intercostal vessel had been ligated the pulmonary hemorrhage would have spontaneously ceased and the patient might well have recovered.

In traumatic pneumothorax this negative pressure is partially or completely neutralized, and in valvular pneumothorax it may actually be converted into a positive pressure. Traumatic closed pneumothorax is not apt to be serious unless it is of the valvular type, as a patient in fair physical condition can well withstand a neutral pressure in one pleural cavity. But in traumatic valvular pneumothorax the pressure in the pleural cavity may be raised above neutral and in this way cause a marked displacement of the mediastinum to the opposite side and result in interference of function of both lungs. If there is respiratory embarrassment, aspiration should be done; but unless this occurs it is probably better to leave the air in place, as it helps to bring about closure of the opening in the lung. In case of an opening in the wall of one of the main bronchi, air may accumulate so rapidly that it is necessary to institute constant drainage. A small metal intercostal tube is better for this than a rubber tube, as it is less likely to result in intrapleural infection.

The danger of open pneumothorax depends to a large degree on the size of the opening in the pleural cavity. If it is as large as the cross section of a main bronchus, the patient is in danger of dying of respiratory failure. The importance of this point has been stressed by Graham, who showed that if the opening into the pleural cavity is less than a cross section of the main bronchus on that side, compensation can be maintained by increasing the depth of the respiratory excursions. If the opening in the pleural cavity is larger than the respiratory passage, air can enter the pleural cavity with less resistance than it can enter the lung through the normal respiratory passage; but even here compensation can be maintained for a time, this depending to a large extent on the size of the opening and the patient's vital capacity. Graham also showed that a large opening in the pleural cavity has a marked effect on both lungs, as the mediastinum is not a fixed structure, as was previously thought, but is quite mobile under normal conditions; and in case of a large opening, the function of both lungs is seriously interfered with. It is important, therefore, in case of a large wound in the pleural cavity, to close it as soon as possible. Three patients in this series had large sucking wounds, which were promptly closed, and all of them recovered.

Intrapleural hemorrhage from the pulmonary vessels should nearly always be treated conservatively; for with the low pressure in the pulmonary circulation, the collapse of the lung will usually control it. If, however, one of the larger vessels of the chest wall is injured, the hemorrhage is less apt to be controlled. If it does not stop in a reasonable length of time and the patient's condition becomes progressively worse, open thoracotomy and ligation of the vessel should be done.

Conservative treatment is indicated in case of intra-pleural hemorrhage which is spontaneously controlled, unless the hemorrhage is so massive as to interfere with respiration, when aspiration with air replacement is indicated. If after several days the blood is not being absorbed or if the patient continues to run a considerable elevation of temperature, aspiration should be done, for removal of even

sterile blood will sometimes cause a prompt decrease in temperature. Only ten of the thirty-four patients with intra-pleural hemorrhage in this series required aspiration.

Penetrating wounds of the lung nearly always produce intra-pulmonary hemorrhage, but these should be treated by rest and sedatives unless a foreign body is left in the lung tissue or unless complicated by some other condition calling for operation. If organic bodies, as bits of clothing, etc., are left in the lung, they should be removed immediately. Bullets and other metallic bodies may be left until the patient's condition improves. In one patient in this series, a piece of clothing within the lung was overlooked, with the result that the patient developed a lung abscess, from which he later died.

Injury to the diaphragm is particularly apt to occur in stab wounds of the lower portion of the thorax and in bullet wounds. Such an injury caused by a bullet is frequently of no importance, but if caused by a knife it is apt to be followed by a diaphragmatic hernia, as the opening in the diaphragm is usually larger than the opening in the chest wall.

Subcutaneous emphysema is of some importance as a diagnostic sign in wounds of the chest, as it often appears when there is penetration of the lung tissue. It is of little importance otherwise unless associated with infection.

The mortality rate in this group of penetrating wounds of the thorax was 20.4 per cent. Four of the patients who died had serious intra-abdominal injuries, one a wound of the neck which was at least partially responsible for his death, and one an injury to the spinal cord. Only four, or 8.2 per cent, died as a result of the intra-thoracic injury alone. The average duration of stay in the hospital of those that recovered was 14.2 days, while the longest stay was 96 days.

Summary

Penetrating wounds of the thorax are necessarily serious because of the important structures which are apt to be injured. A large percentage of patients with such wounds will recover if treated conservatively, but a certain number will require operation. In this number are the wounds of the heart and great vessels, wounds of the vessels of the chest wall, sucking wounds, and those with valvular pneumothorax.

Cardiac injury is often hard to diagnose, but any patient with a penetrating wound in the cardiac area with evidence of beginning circulatory failure should be studied carefully and, if the symptoms and signs of cardiac injury are present, should be operated upon immediately. Injury to the vessels of the chest wall is very difficult to diagnose, but if there is evidence of continued intra-pleural hemorrhage, thoracotomy should be done and the hemorrhage controlled.

Sucking wounds should be closed as soon as possible. If suture material is not immediately available, they may be temporarily closed by using a rubber dam or moist gauze, or by strapping the margins of the wounds together with flamed adhesive.

If there is a closed pneumothorax with marked mediastinal displacement and respiratory embarrassment, aspiration of air should be done; and if this reaccumulates rapidly, continuous decompression by an intercostal tube is indicated.

Patients with blood in the pleural cavity should be treated conservatively in the early stages, unless the hemorrhage is so massive as to cause respiratory embarrassment, when the blood should be aspirated and partially replaced by air. Aspiration is indicated later if the blood is not absorbed or if there is an undue rise of temperature.

In this series of forty-nine penetrating wounds of the thorax, eight patients had wounds of the pericardium and intra-pericardial structures. Six of these were operated upon and four of the six recovered. Two were treated conservatively, with one recovery and one death. Thirty-four patients had intra-pleural hemorrhage but only ten of these required aspiration. Three patients with large sucking wounds of the chest wall were operated upon and all recovered. Of six patients with injuries to the larger vessels of the chest wall, five were operated upon and the vessels ligated and all of them recovered. In one patient with an injury to a posterior intercostal artery, ligation was not done and death resulted. Of five wounds of the diaphragm only one required suture. There were three infections of the chest wall; two of these developed empyema and one developed a lung

abscess, as a result of the retention of an organic foreign body in the lung.

In closing, I wish again to emphasize the fact that the majority of patients with penetrating wounds of the thorax will recover under conservative treatment; but in a small percentage, early operation is necessary.

DISCUSSION

DR. R. L. PAYNE, Norfolk: This is an exceedingly interesting and profitable paper that Dr. Bigger has presented to us ths morning, and I think he is to be congratulated from many angles upon the results he has obtained in his cases. The mortality rate in his series, 20.4 per cent total, and 8.2 per cent from the intra-thoracic injury alone, struck me when I read his manuscript as a very, very remarkable mortality rate.

I was struck, too, by the records of St. Vincent's Hospital for ten years, which gave a rate comparable to Dr. Bigger's, namely, 8.6 per cent. In addition to that, we had a series of stab and bullet wounds of the lungs, in which series the mortality was 16. per cent, showing that the mortality is high.

The greatest difficulty I have had in penetrating wounds of the chest has been infection associated with hemothorax. That has always seemed to me the greatest difficulty; and, while we know now and have known for years that conservatism is the main thing in the treatment, yet when we get a hemothorax and feel that it has to be operated upon, even with aspiration, my experience has been that these cases have often wound up with serious infection—perhaps lung abscess or empyema; and some of them died.

With reference to heart wounds, it is an interesting fact that so few of these have been done. We must remember that heart lesions have been operated upon for years, even back in Napoleon's time, Dr. Trout told me. That work paved the approach to the operation for perforating wounds and has been the foundation upon which has been built the modern surgery of the heart, which we are doing now for chronic adhesive pericarditis. I operated upon a patient eleven years ago for a penetrating bullet wound of the heart but did not find the bullet. The man lived eleven days and then died. Autopsy showed that the bullet was lying loose in the bottom of the left ventricle.

Two of our junior surgeons in Norfolk operated upon a man two months ago with stab wound of the heart, and he had a perfect recovery. The most important thing is diagnosis; it is rather hard to know if a man has a stab wound of the heart, and the most critical thing you can keep before you is failing circulaton. When blood accumulates in the pericardium, it begins to press on the heart and to produce what is known in heart surgery as tamponade. There is back pressure on the right auricle, and the blood can not get into the heart. Therefore, the thing you will observe in these cases is cyanosis—cyanosis coupled with extremely rapid and feeble pulse. The thing that has made men hesitate to operate on stab wounds of the heart is that they do not get the physical signs, which led them to believe the pericardial cavity to be full of blood and distended. The fact is that the pericardium is an extremely inelastic structure and distends only gradually in chronic disease.

In acute conditions, X-ray study will not help you at all to decide whether there is blood in the pericardium; only the presence of air will help you, as Dr. Bigger said.

Finally, I think Dr. Bigger is to be tremendously congratulated on the suture of the great vessels around the heart. I do not know of anything that could be more difficult. Even the most facile surgeon has difficulty in doing vascular surgery. Dr. Bigger has gotten away with those difficulties beautifully and successfully, and I think he is to be congratulated.

I should like to add that we think in all operations for acute and chronic conditions of the heart they should be drained. I know that Dr. Bigger left that out inadvertently.

A COMPARATIVE STUDY OF PROSTATECTOMY AND TRANSURETHRAL RESECTION OF THE PROSTATE.*

A. I. DODSON, M. D., F. A. C. S., Richmond, Va.

Efforts to relieve prostatic obstruction by transurethral methods antedated complete removal of the prostate by about forty years. The lack of means of visualizing the field and for controlling the hemorrhage greatly handicapped the original workers in this field. Improvements in the surgical technic of prostatectomy in the preparation of the patient, and a better understanding of the causes and methods of correction of the pathological processes produced by prostatic obstruction resulted in safer operative results which for a time relegated intra-urethral instrumental procedures to the background.

Mercier, in 1844, devised an instrument for incising the prostate, which he used successfully notwithstanding the disadvantages of hemorrhage. In 1874 Bottini improved Mercier's instrument by adding a cautery with the hope of controlling bleeding. Despite further improvements by Freudenberg, Goldschmidt, and Chetwood, the instrument fell into disuse because of lack of visual control and means of accurately preventing hemorrhage.

The development of Young's punch, in 1913, provided a means for relieving median bars and bladder neck contractures, and the modification by Caulk of adding the cautery controlled bleeding. Young and Livermore suggested the use of electro-coagulation for control of hemorrhage, and this feature is incorporated in the punch instruments of Braasch, Day, and Kerwin.

In 1926 Collings first published the results of median bar incision with his electrotome. Collings used a hooked shaped electrode ener-

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gized by the high frequency current. The electrode was used through the McCarthy pan-endoscope, and with it a median bar or a small prostatic obstruction could be effectively whittled away.

The introduction by Stearn. in 1925, of his resectoscope paved the way for accurate and adequate transurethral prostatic surgery. This instrument as modified by Davis and the resectoscope developed by McCarthy are generally used at the present time. These instruments give a constant and satisfactory view of the part to be removed. The groove left after each cut can be immediately reviewed and the bleeding points coagulated before continuing the excision.

For several years I have employed the Collings' electrode with the McCarthy foroblique pan-endoscope in the treatment of median bars and vesical neck contractures. and have frequently destroyed co-existing small protruding prostatic lobes. The results have been satisfactory and lasting in a great majority of these cases.

The present report is based on the treatment of thirty-five patients admitted to the wards of Memorial and St. Philip Hospitals for twelve months ending October 15, 1932. Of these patients, eight were suffering from carcinoma of the prostate. Four of these cases of carcinoma were diagnosed clinically previous to operation, while in four instances the diagnosis was made by examination of a specimen of the tissue by the pathologist. In two of these cases, a portion of the gland was removed suprapubically and radium applied. In two others the gland was enucleated and the treatment supplemented by X-ray. All of these four patients with cancer were admitted with complete retention of urine. Non-protein-nitrogen on admission varied from 25 to 130 mg. The pre-operative preparation in these four cases averaged fifteen days. The post-operative treatment averaged 51-2/3 days. Four cases of carcinoma were treated by transurethral resection, supplemented by X-ray therapy. The average pre-operative treatment of these patients was 25½ days. Three entered the hospital with complete retention, and one with a residual of 8 ounces. Non-protein-nitrogen varied from 35 to 114 mg. on admission. The post-operative hospitalization averaged 15¼ days.

Of the cases of benign obstruction three were suffering from fibrosis of the neck of the bladder, while twenty-four had varying types of prostatic hypertrophy. One of these patients died during the period of preparation for prostatectomy. Of the remaining twenty-six, ten were treated by the open operation of prostatectomy. In four the prostate was removed by the perineal route and in six it was removed suprapubically. All of these patients entered the hospital with complete retention of urine. The non-protein-nitrogen varied from 32 to 72 mg. per 100 c.c. of blood. The pre-operative preparation averaged 14-2/5 days. The post-operative treatment averaged 37-1/5 days. All of these patients left the hospital with satisfactory bladder function.

Of the sixteen patients with benign obstruction treated by transurethral resection, the residual urine varied from three ounces to complete retention. Nine of these were not able to void when they entered the hospital. Non-protein-nitrogen on admission varied from 27 to 65 mg. The pre-operative preparation averaged eighteen days. The post-operative treatment averaged seventeen days. Fourteen of these patients left the hospital with satisfactory bladder function; one had a considerable degree of incontinence of urine, and one died from cardiac failure.

The average number of days of hospitalization for patients treated by open operation was fifty-four. The average number of days of hospitalization of patients treated by transurethral prostatic resection was thirty-five. The average hospital stay of our transurethral cases is considerably above the average as reported by the majority of writers, but this group of cases were all admitted to the wards and many of them were in very poor general condition, the majority entering in a pre-uremic state. Furthermore, they were kept in the hospital until all danger of secondary hemorrhage or infection resulting from the separation of slough had disappeared. Of a series of nine private patients treated by transurethral resection since April. 1932, there was an average hospitalization of seventeen days. This includes one patient who, because of complications of uremia and stone, remained in the hospital sixty-five days.

The amount of retained blood urea nitrogen or of excreted dye does not tell the whole story in many of these old men. In one, there is a disordered gastro-intestinal tract; in another

a lagging circulation, while still another may run a persistent fever in spite of all efforts to ascertain its cause; and so on through the entire retinue of ailments that beset the old man, particularly when his body mechanism has been slowed up by the poisons produced by prolonged urinary back pressure.

It will be noted that the average number of days of preparation in the cases treated by transurethral resection was about twenty per cent longer than in those treated by open operation. This is accounted for by the fact that two of the patients treated by transurethral resection entered the hospital in an extreme degree of debility, both with unbalanced circulatory systems, both suffering from definite uremia, one from general anasarca because of a failing heart. These patients required many days of careful attention before even the mildest type of surgery could be attempted. They were among the first to undergo transurethral resection and were so treated because we were afraid to submit them to prostatectomy. With these two exceptions, all patients with prostatic hypertrophy seen in the first six months of this twelve months were operated upon by open prostatectomy. After this all patients admitted were treated by transurethral resection except one whose prostate was removed while I was out of the city.

I realize that this group is too small to justify any very dogmatic conclusions. For that matter, the period over which transurethral resection has been practiced is too short to be definite as to its merits. At so recent a date as 1928, Keyes stated, "In general, therefore, it is held that an attack upon a prostatic obstruction by a urethral instrument has no prospect of success if there is enlargement of the lateral lobes or if the median bar projects sufficiently to be described as a lobe." When we compare that statement with the glowing reports of transurethral resection by Davis, McCarthy, Livermore, and others at the present time, we see that in this work we have traveled at a very rapid rate and a careful check-up of the results extending over a period of years will be necessary before the definite status of this new procedure can be ascertained.

I have been impressed by the fact that one must possess a very accurate knowledge of the posterior urethra in order to be successful in this procedure. My previous experience with the McCarthy cystoscope and efforts to relieve minor obstructions with the Collings' electrode manipulated through this cystocope have been very helpful in the more extensive procedure. I have been amazed at the lack of shock and exhaustion resulting from the manipulation in transurethral resection, for my experience has taught me to have a profound respect for the urethra of the elderly man. We have used spinal anesthesia in all of these cases, usually giving the patient 100 mg. The complete relaxation resulting from this anesthesia probably has something to do with the ease of manipulation and the consequent lack of undue trauma to the posterior urethra.

In the matter of preparation, we have followed the same routine in the transurethral cases as in those treated by open prostatectomy. The indwelling catheter has been used whenever tolerated. When not tolerated because of pronounced discomfort or undesirable reactions, suprapubic drainage has been established. This was necessary only once in our series. Blood urea nitrogen estimation has been done on all cases on admission, and repeated at weekly intervals; other function tests were carried out when feasible. The blood pressure was checked at intervals of two or three days, and when sufficient fluids could not be taken by mouth they were supplemented by subcutaneous and intravenous methods. Transurethral resection has been preceded by a period of drainage in all cases, varying from two to fifty-seven days according to the needs of the patient. The amount of tissue to be removed varies with the individual case. In some, the resection of 2 or 3 grams has given adequate bladder drainage, while in others it has been necessary to remove from 20 to 25 grams. We have the assurance of Caulk that once having removed sufficient tissue to permit the bladder to empty itself, the remaining prostate will always tend to decrease in size. I know this to have been true in a few of my patients that I have had an opportunity to examine after a lapse of three or four months. The time required for the resection has varied from thirty minutes to two hours.

The most troublesome feature of the transurethral resection is bleeding. However, it can be adequately and permanently controlled if care is taken to stop each bleeding point as it arises. It is well to review each cut and

stop the bleeding before proceeding with the resection. In two instances by neglecting this principle, twelve hours later I have had to remove blood clots and coagulate the bleeding areas. The verumontanum which lies near the apex of the prostate should be used as a guide, for cutting beyond this area is inviting disaster. One of my patients suffers from partial incontinence of urine as the result of disregarding this. Following the resection the bladder is drained with a relatively large catheter, usually 22 to 24 French, and I have found it of advantage to cut off the tip of the catheter so that any clots that may form in the bladder can be more easily aspirated.

The convalescence in this series of cases, with the exception of three cases, has been remarkably free from complications. In seventeen of the patients there was no increase of temperature beyond 101°F. and that for only a short time. There was no secondary bleeding and no tendency toward uremia. The patients were able to be up and around in an average of three or four days. In no instance was it necessary to do a second resection, nor was there a residual of more than two ounces of urine immediately after the catheter was removed. In these cases the residual has subsided to less than an ounce before the patient left the hospital, and the immediate bladder function was much better than in patients submitted to open prostatectomy. One patient developed a scrotal abscess due to urethral injury, greatly prolonging his hospital stay and resulting in partial incontinence. Two patients died. One was an elderly man with an advanced carcinoma of the prostate who entered the hospital with complete retention. He made an excellent recovery from the transurethral resection, but toward the latter part of his stay in the hospital he had a small boil on his ankle which developed into a cellulitis and large abscess. His death, so far as we could determine, had no direct relation to the operative procedure. Another patient entered the hospital with a very high blood pressure and in a rather dazed condition, with a diagnosis of advanced arteriosclerosis. There was a residual urine of about ten ounces, but blood urea and other kidney function tests were normal, and blood urea taken four days before his death was only 34 mg. per 100 c.c. of blood. While this patient ran a low-grade temperature throughout his post-operative period, his death came rather unexpectedly and apparently as the result of cardiac failure. This patient at no time could have been considered a safe operative risk, and probably was an unwise choice even for transurethral resection.

Conclusions

1. Thirty-five patients entering the wards of the hospital division of the Medical College of Virginia are reported.

2. Of this group fourteen were treated by open prostatectomy. One died in preparation for operation. Twenty were treated by transurethral resection. There were no deaths in the cases operated upon by prostatectomy and the final results were satisfactory. There were two deaths in the group treated by transurethal resection. One of these, a case of advanced carcinoma, died apparently from an unrelated cause. The second, a very poor risk, died about a month after transurethral resection from cardiac failure.

3. The average hospitalization for patients treated by open prostatectomy was fifty-four days, while the average hospitalization for patients treated by transurethral resection was thirty-five days, the majority of this saving of hospital days being due to the shortened post-operative period.

4. Patients submitted to transurethral resection were in better condition when discharged from the hospital than those treated by open prostatectomy. They were more robust and, as a rule, had better bladder function.

5. I believe that routine open prostatectomy if done on all of these patients would have resulted in a higher mortality than is here reported.

6. No doubt time and experience will improve both our instruments and our technic and I am convinced that the future holds much for this intra-urethral procedure.

Medical Arts Building.

Discussion

Dr. S. Beverly Cary, Roanoke: Dr. Dodson has given us a most comprehensive presentation of a very live subject. He has left, however, very little to be added in the discussion.

We feel that with the present equipment available, it is possible to relieve ninety per cent, or more, of vesical neck obstructions without recourse to radical surgery. As we become more expert in our technic of operating electro-surgical equipment, prostatectomy will probably be reserved for the rare case in which it is impossible to introduce an instrument, and in those with mass've intravesical enlargements of the lateral and median lobes Also in certain cases in which the glands are very vascular, because, if we attempt a resection in these very vascular glands

that we occasionally come in contact with, it is almost impossible to keep the field clear in order to do the work successfully.

As Dr. Dodson pointed out, one of the most important things to take into consideration and bear in mind in doing this work is to keep away from the external sphincter, because if we should cut the external sphincter we shall have a patient with incontinence who will dog our steps for the rest of his days.

Resection not only largely eliminates prostatectomy in the old man who is approaching the sunset of life with a multitude of infirmities, but it offers relief to the man of middle age who is in the incipient stage of prostatism and is rightfully unwilling to undergo the radical procedure of complete prostatectomy and loss of sexual power.

Time will not permit me to go further into this subject, as I have several slides which I wish to demonstrate of a very unique case which has recently come under my observation.

Dr. Cary showed the following slides:

1. This man, aged forty, came into my office complaining of intermittent obstruction to the urinary flow. He also complained of terminal hemorrhage. He gave a history of having passed ureteral calculi several years previously, so I thought it fair to make a precystoscopic diagnosis of stone in the bladder. On introduction of the cystoscope, I found this tumor mass arising from the posterior segment of the vesical sphincter. It was a question how to remove that without an open operation, so we decided to use the McCarthy electrotome. With a few changes in the method of its use, we were able to amputate this tumor mass without the least bit of blood staining in the urine.

2. This slide shows the McCarthy electrotome in place. Ordinarily the excursion of the loop of the McCarthy instrument is from within outward, but in this case we had to push the loop forward for the amputation.

3. Here, you see, the loop has been driven home and the tumor mass is lying loose on the floor of the bladder, and here is the stump of the pedicle, which was thoroughly coagulated. There was no hemorrhage, as I said, at the time of operation or after. The tumor was then removed with Young's rongeur cystoscope forceps.

Dr. Clyde F. Ross, Richmond: I have been associated with Dr. Dodson in ferreting out these cases and sending them over to the hospital from the outpatient department of the Medical College of Virginia. This is a new procedure, and very revolutionary, as you know. Dr. Keyes said in 1928, as you heard Dr. Dodson say, that it was absolutely homicidal to pass a cystoscope on an old man with an enlarged prostate.

A patient came into the out-patient department day before yesterday with the history that he had had an intraurethral resection in July over at Memorial Hospital. Dr. Gordon, who is connected with the outpatient department, examined this patient and reported to me that he had a stricture in the posterior urethra. The question comes up, how many postoperative results of that nature shall we have? (I imagine this is the result of cicatricial tissue formation). These patients have been operated on for so short a time that it is impossible to tell what the real results will be. It looks mighty rosy now, after operating on them a year or two ago, but the question is what will it be after three or four years?

Dr. W. W. S. Butler, Jr., Roanoke: I do not think Dr. Dodson does justice to himself when he speaks of the time these patients spent in the hospital; the time after operation, not before, is what sets this method aside. It is usually about a week, except when a large amount of tissue must be removed, and then rarely over two weeks. Not infrequently the preliminary catheter treatment can be carried out at home up to a day or two before operation. I refer to the early cases, where we expect to remove a small amount of tissue, and with the help of the shrinkage which inevitably occurs, we prevent the destructive changes of prostatism by a minor procedure.

Discussions of this method are frequently based on observations of the older punch operations, which are entirely different. This operation has gone through a longer period than has been stated in the previous discussions. Dr. Davis has done it for four or five years; he has done approximately five hundred cases and his morbidity rate as compared with the same number in the same area by former methods has been twenty times less. Two years ago, in Memphis, Dr. Davis reported one hundred cases with results which seemed too good to be true. Yet if you will read of his reception recently by the New York Branch of the American Urological Society, you will see the method approved by those in the best position to know.

The man with complete retention or symptoms of advanced prostatism has to be operated on, and it is not my intention to create the impression that, in this group, this is not a major procedure. Even in these, with few exceptions, the method reduces tremendously the amount of post-operative suffering and the period of convalescence, and makes curable many who would otherwise be inoperable.

A real value to which I would like to call attention is in the field of prevention which it opens up. The man with a toxemia, losing in weight or strength and appetite, with an increasing blood pressure or changed mental attitude, rather than wait for local symptoms, should be examined for prostatic obstruction. An increased blood urea or non-protein nitrogen points definitely in this direction. No type of case affords more grateful patients than these following removal of a small amount of tissue and a short period of discomfort which is not severe.

Dr. Stanley H. Graves, Norfolk: I have listened to Dr. Dodson's paper with a great deal of interest. It is very complete; he has covered the ground beautifully, but there are a few points which I think we might emphasize. One is in speaking of this new operation as a minor procedure, as many have called it. I think that most men who have dealt with the operation have found that it is rather more than a minor procedure and that it requires a great deal of experience and skill and help to perform a regular resection with the resectoscope. Now, with the regular McCarthy punch it is not so difficult, but even that is not, in my mind, altogether minor. You frequently have bleeding and slow urination for days. With the resectoscope all of this trouble is largely multiplied.

Another point that might be cleared up in speaking of a prostatectomy, with the resectoscope, you should let your patient know just exactly what to expect. Enlarged prostates are classified as Class 1, Class 2, Class 3, and Class 4. I do not think you can operate on a patient in Class 4 with a resectoscope with much hope of success. If it is carcinoma you don't want to do much in such a case, but almost anything you can do is likely to be of some help to the patient in voiding. But Class 4 is certainly not very applicable to a resectoscope. Class 3 in selected cases Class 1 and Class 2 will be the types in which you will have the best success with the resectoscope.

Now, I have not had much experience with the resectoscope; most of my experience has been with the McCarthy punch, and the rest of my bladder

experience through the urethra has been with bladder tumors, etc. From the experience I have gained in observing operators, and such information as I can glean from the literature, most of the writers will tell you they accomplish very little with Type 3 and much less with Type 4.

I think the method is a wonderful adjuvant to the treatment of prostates and has come to stay. Many patients will be greatly relieved and benefited by it. The operation, however, has in no way taken away the many dangers we encounter with prostatectomy in the open operation.

Many of the cases in which you do the resection method have to be operated upon afterwards, and a good percentage of them have to be opened to stop post-operative hemorrhage. I concede that much of this may be due to a failure to use sufficient care in selecting the cases for this treatment.

Most of the operators admit that they do not shorten the stay of the patient in the hospital with this procedure. Dr. McCarthy himself warns any novice against too hasty and careless use of this instrument.

Dr. Dodson, closing the discussion: I am glad Dr. Ross mentioned the patient with stricture of the urethra. None of these patients have had adequate post-operative study. This paper is intended as a preliminary report of our work. Our experience with the method has existed only over a period of a little over six months. As I mentioned in the conclusion of my paper, a good bit of further work and study of these patients will have to be done before we can draw definite conclusions as to the value of transurethral resection. But the results of the men who have been longer in this work certainly indicate that it has a very wide field. I think the extent to which it is used will vary with the enthusiasm of the operator and his ability to use the procedure.

I do not think I used the term "minor procedure," but it is a far less major procedure than an open prostatectomy.

Only time will show whether my patients will have to be re-operated upon or not. At the time of discharge, or when last seen, they had satisfactory bladder function, and the function was very much better than the bladder function immediately following prostatectomy. There is less frequency and less pain. The patients all went out in a more robust state of health.

One thing I did not mention in my paper is that two patients were resected following the operation of prostatectomy.

DETACHMENT OF THE RETINA.*

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The importance of any detachment of the retina depends largely upon its underlying pathology. It may be a mere incident of little value, for example when it occurs during endophthalmitis; here the causative disease is so potent as to destroy vision regardless of the additional retinal separation. It may be slightly more important when it occurs during the acute phase of an exudative choroiditis, again it may be the only objective feature of a choroidal new growth or it may be the serious complication of a trivial injury or modest degeneration in the retina, producing visual loss out of all proportion to its etiological basis. Its importance can hardly be overemphasized when it occurs following an injury or accompanying the degenerative changes in a myopic eye. Here the separation assumes prime importance and the return of useful vision depends entirely upon the end result of our treatment of the detachment. This paper will deal only with the socalled "spontaneous detachments" which occur in comparatively normal eyes where the exciting cause may have been a surprisingly slight trauma but the loss of vision serious, and the treatment heretofore without result.

I, therefore, purposely omit any comment on diagnosis and differential diagnosis, of a detachment and consider only the factors behind a spontaneous detachment and its surgical treatment.

Renewed interest in this very serious ocular condition was manifested in America following the publication of an article in the *Archives of Ophthalmology*, June, 1930, by Schoenberg, who had visited Gonin in Switzerland. Since this article, publications have appeared by Juler and later by Ormond in the *British Journal of Ophthalmology* and *British Medical Journal*, in which Gonin's observations and conclusions are very carefully reported.

Our anxiety to learn the operative procedure which offers the patient more than a "straw of hope" may cause us to neglect the facts underlying the method. To quote from Gonin, "It is surely of little value to witness an operation if one is unable to understand not only the how but also the why of the procedure. Before inquiring about the technic of and performing the thermo-cautery it is necessary to be well aware of anatomic and clinical reasons."

It is, therefore, proper that we should say a few words about these anatomic reasons.

Early observations of the preponderance of myopia amongst patients with detachment have been repeatedly verified and would appear to suggest more than a coincident relation. It is safe to assume that 50 to 65 per cent of patients with detachment have some degree of myopia. The stretching of the choroid and sclera and the inability of the retina to accommodate itself to this new arc was formerly held to be an adequate explanation of this relationship. If the distention phenomenon were the sole cause of the detachment, however,

*Read by invitation before the Virginia Society of Ophthalmology and Otolaryngology at its meeting at Virginia Beach, Va., May 14, 1932.

separations should occur with the high degrees of myopia more frequently and also more frequently during the progressive period of myopia; these conditions, however, are not adequately fulfilled. The factors, also which make eyes susceptible to detachment exist even in lower degrees of myopia and must exist in eyes without myopia. The elucidation of these factors has attracted many experimenters and consequently a vast amount of literature has accumulated. The following statements condense the investigative work of the last few years and are a probbale explanation for a large number of spontaneous detachments associated or not with myopia.

Since 1870 the presence of one or more lacerations of the retina in an eye with a detachment has been seen but its importance unrecognized until 1919 when Gonin presented a report on his initial success. In that report and many subsequent publications he emphasizes the "tear" in the retina as the determining cause of the spontaneous detachment. His observations, however, have not been thoroughly accepted. However intense the controversy may become over the importance of a retinal tear, the results of surgical treatment definitely establish to it an undeniable prominence. Believing then, as we may, that the tear is the immediate change in the retina necessary to a detachment, it becomes proper to inquire into the causative factors of the tear.

It is difficult for one to believe that an otherwise healthy retina could become torn by even an unusual ocular movement or strain and so frequently the immediate injury has been slight and in many cases of spontaneous detachment no history of injury is obtainable. It is, therefore, necessary to show some previous inflammatory or degenerative change in the retina rendering it susceptible to laceration. An examination of the retina of almost all eyes, removed for any cause, reveals certain changes which have taken place in the retina in the vicinity of the ora serrata. The changes consist of a degeneration of the retinal elements with the collection of highly albuminous fluid accompanied by the formation of cysts. The disappearance of the retinal tissue may have progressed to the degree that the cyst is separated from the vitreous cavity by the internal limiting membrane alone. This condition is known to histologists as "Iwanoff's oedema" or "cystic degeneration of the retina at the ora serrata." Myopia and senility favor the development of this degeneration with more certainty and more extensively. Hanssen in an examination of thirty-seven myopic eyes, free from detachment, found twenty-six showing cystic disease extensive at the ora and in six cases appearing as far backward as the equator. Pressburger in a careful examination found cystic degeneration as far back as 7 mm. from the ora. With the thinning of the inner wall of the cyst a slight trauma may rupture the retina and permit vitreous in one form or another to lift the membrane from the pigment epithelium. The situation of the cystic disease anterior to the equator explains the almost constant finding of the tear within this area and the more certain presence of cystic disease in myopic eyes correlates the observation that a high percentage of eyes with detachment have some degree of myopia.

Hanssen and Vogt consider that this mechanism accounts for the majority of spontaneous detachments. Gonin supports this theory but believes that weakening of the retina at the site of a healed chorio-retinitis either inflammatory or degenerative as in myopia may be held responsible for some tears.

It is well to be familiar with Gonin's own belief that retinal tears result from primary change in the vitreous. Inflammation or degeneration produce a separation of the vitreous into two component fluid like parts.

a. Non-albuminous fluid which is identical in composition with the subretinal fluid in detachment.

b. Vitreous gel. Through this non-albuminous fluid run strands from the vitreous gel. which retain their attachment to the internal limiting membrane. Sudden jars place a strain on these strands which in turn drags on the retina and tears it.

This theory has insufficient pathological support for ready acceptance.

To summarize the anatomic considerations.

1. We must accept the hole in the retina as the primary cause of this type of detachment. Vogt says to contest the causal connection between a spontaneous detachment and this hole formation is denying the simplest fact. Assuming then that the hole in the retina is primary, what are its causes?

(a) Direct trauma to a healthy eye can produce a tear in the retina, usually situated peripherally and no previous degenerative change in the retina necessarily present.

(b) That a large group of spontaneous cases occurring without injury to the eye and where some degree of myopia is frequently

present compels one to believe that the retina has been so weakened by "cystic degeneration" or "chorio-retinitis," that the tear has taken place spontaneously.

(c) Gonin's elaboration of Leber's original traction theory is well to remember, that is, bands exerting traction on the retina through an altered vitreous.

Recognizing that tears in the retina are probably the factor bringing about its separation, it is essential that we identify them when present. De Wecker in 1870 was the first to emphasize their frequent occurrence. Vogt and Gonin believe one or more tears to be present in almost all detachments. The tear appears as a brilliant red area varying in size, usually lying on the summit of the detachment. Its shape is variable—round, triangular, horseshoe, etc., are seen. The edges are usually everted towards the vitreous.

Repeated thorough search after full dilatation of pupil, examination of patient standing, sitting and lying, examination after rest in horizontal position for a few days will reveal the presence of one or more tears in practically 100 per cent of cases of early detachment. Opacity of the media, long standing detachments and their situation in the extreme periphery makes the finding of a tear difficult.

It is well at this point to insist again upon maximum dilatation of the pupil. This is best obtained by atropine and adrenalin instillation aided by subconjunctival atropine and adrenalin. A pupil 7 mm. wide is to be considered ideal.

Treatment: Few surgical or medical conditions have so defied all attempts of brilliant men to cure throughout the many years as has "detachment of the retina." Permanent success followed their efforts no oftener than 1-1000 cases. Ancient and more modern means of treatment included: rest in bed, salt injections, withdrawal of subretinal fluid, scleral cautery, injection of substances into the vitreous and so on, each treatment having its own adherents but none a noted degree of success. It remained for Gonin in Lausanne, Switzerland, to see the importance of retinal tears in detachment and to attempt obliterating these holes by cauterization. He was astonished to have it followed by complete reapposition of the retina.

The success of the operation depends upon the selection of suitable cases and complete cooperation of the patient. Early detachments with a moderate number of tears, without evidence of inflammation in the uveal tract and moderately clear media, constitute a favorable case. If more than one tear is present remote from one another, two or more operations will be required. The patient must understand the limitations of one procedure and be prepared for as many operations as necessary.

Technic: The success of the technic depends upon the accurate localization of the tear on the outer surface of the eyeball and searing this area with the actual cautery. Many methods of localizing the tears have been suggested, the most accurate being Lindner's method with the aid of the Gullstrand ophthalmoscope.

Gonin's method while rather crude in comparison is sufficiently accurate to permit of excellent results. With the ophthalmoscope it is possible both to visualize the tear and also the edge of limbus immediately in front of the tear. This point is marked with india ink after anesthetizing the cornea, next a point directly opposite on the limbus is marked. This is essential to insure the accurate meridian when the eye is rotated to make the approach possible. A fine thread is used to connect these points. Having obtained the meridian on which the tear is situated, it is then necessary to estimate in disc diameters the approximate distance between the ora and the tear, remembering that one does not, even with full rotation of the eye and maximum dilatation of the pupil visualize the ora, but rather a point 1 mm. behind the ora. Each disc diameter is 1½ mm. If the estimated distance between ora and tear be 3 disc diameters, the calculation will be 3 times 1½ = 4½ mm. plus 1 mm., or 5½ mm. behind the ora serrata. The ora serrata lies 8 mm. behind the limbus in emmetropic eyes, 9 mm. behind in myopic, and on nasal side it is ½ to 1 mm. more behind.

The patient is prepared for operation with exceeding care. It is important that he be given a laxative a day or so before the operation, and sedatives should be used generously. After full local anesthesia, including subconjunctival cocaine, a conjunctival flap is dissected, so as to expose the point of the sclera through which one wishes to cauterize. The convex edge of the flap should be toward the limbus and the edge of flap some mms. away from the localized point on the sclera. To expose the point satisfactorily it may be necessary to assist the patient in rotating the eye by a suture in one of the muscles. It may also be necessary to tenotomize one of the

muscles if the tear should lie beneath.

Having exposed the sclera at the desired place of searing, the actual cautery, with a special tip, is heated to white heat. Very carefully permit the tip to burn its way through sclera and choroid. When the subretinal space has been reached, the fluid is permitted to evacuate itself while the cautery is withdrawn. The cautery is again heated to "white heat" and introduced through the opening a distance of 1 to 1½ mms. and permitted to remain for eight seconds. It is then withdrawn, the flap is secured in place by sutures, atropine is instilled, both eyes bandaged, and patient returned to his room. The patient should be turned on his side, the foot of the bed elevated, or one or two pillows used under his head, depending on the location of the detachment, to permit gravity to assist in the re-attaching of the retina.

Post-operative pain and restlessness should be controlled with sedatives. The first redressing may be made at forty-eight hours and subsequently each day. The eye should be examined after five days. If the retina is found in place, the patient is kept in bed from eight to fourteen days. It would seem wise to insist upon complete physical rest except walking for some time. If the retina is not attached after the first dressing, allow patient to get up.

Complications: 1. It is not infrequent for a blood vessel to be adjacent or to cross the hole in the retina and be damaged during the cauterization, resulting in a hemorrhage into the vitreous.

2. Incomplete cauterization of the tear, or the measurement may have been inaccurate and the tear completely missed by the cautery tip or its zone of influence. The occasional occurrence of this misfortune in the practice of well qualified physicians emphasizes the need of repeated careful examination and re-checking of the scleral localization. The resulting area of disturbance in the retina serves, however, as a guide to the next operation which may be performed within ten to fourteen days.

There are certain limitations and disadvantages to the above technic which are unnecessary to discuss at length, but in probably 10 per cent of cases of detachment the hole is not in the retinal tissue but consists of a tearing away of the retina from its insertion at the ora, so called "disinsertion of the retina." It is obvious that the thermo-cautery operation in this type of case is unsatisfactory. In an attempt to obtain closure of a large single hole or a wide "disinsertion," the "Guist modification" is more valuable. The technic is as follows:

The scleral localization of the injured retina is proceeded with as in the operation of ignipuncture. The patient is prepared for operation as outlined previously. The sclera overlying the tear and a large adjacent area are exposed. If necessary, tenotomize one of the recti muscles, and numerous trephine openings, using a 1½ mm. trephine, are made through the sclera at this site, exposing the choroid. As many as fifteen to twenty may be performed at one operation. All of the areas from which a piece of sclera is to be removed are outlined with the trephine. From the most posterior of these areas the button is removed first and the underlying choroid is treated with potassium hydroxide for two seconds and neutralized with ½ per cent acetic acid. Similar treatment is then given to each of the remaining areas, after carefully removing the sclera. Having completed the cauterizing, the subretinal fluid is drained by puncturing through the choroid through 2 or 3 of the areas trephined. The conjunctiva is secured in place and patient returned to bed.

The subsequent care of patient is extremely important. Absolute rest in a favorable position is essential. The re-attachment of the retina following this operation is obtained by the adhesions which take place between choroid and retina as a result of the choroiditis which the alkali produces.

It appears that this operation, because of its simplicity of technic and safety, has already replaced the ignipuncture in many clinics abroad and, when more widely practiced in America, will produce the best results.

Results of Treatment: The exceedingly brilliant results of surgery in the treatment of detachment of the retina are emphasized by contrast with former results as expressed by Sir Wr. Lister. In 1924 he wrote: "Personally I have seen no case in which there was a hole improved either spontaneously or after treatment and it is my opinion that with our present available methods such cases of detachment are practically hopeless."

Derrick Vail questioned 281 oculists in America a few years ago concerning their results in detachment. He was informed by 250 that they had never cured a single case, twenty-five had obtained one satisfactory re-attachment.

In 1928 Gonin reported twenty-six absolute

and permanent cures with a single ignipuncture operation and eleven more which required more than one operation before complete success. In 1930 he said one may expect complete success in 60 per cent of early cases.

The results of the "Guist" operation are reported by Lindner in a late 1931 issue of *Graefe's Archives*. In twenty-two operations from May 1 to June 30, 1931, he had fifteen absolute cures.

Even this incomplete report of results convinces one of the important change which has taken place in the treatment of detachment and it becomes necessary that we be qualified to give to our patients the advantage of surgery in this condition.

Summary

It is no longer possible to disregard the importance of retinal tears. Such observers as Gonin and Vogt consider the tear the immediate cause of the detachment.

Tears in the retina may be produced occasionally by direct injury but their occurrence in a retina previously damaged by "cystic degeneration" or "chorio-retinitis" is much more frequent.

Identification and localization of the tear is requisite to successful surgical therapy.

Repeated painstaking examination of the detachment after wide dilatation of the pupil will reveal a tear in nearly 100 per cent of early cases. Early operation on all cases of spontaneous detachments is urged by competent observers.

Closure of the tear by ignipuncture or by the "Guist method" will produce a most satisfactory increase in cures.

Note.—The author then showed a few slides which illustrated his subject.

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POTT'S FRACTURE.*

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I wish to discuss briefly the usual methods of treating Pott's fracture, as well as certain troublesome factors in attaining a good result; and then to call attention to an ambulatory method of treatment which promises well in cutting short the period of disability.

In general, Pott's fracture is produced by a force that wrenches the ankle and foot into eversion, and the *deformity* consists of a lateral displacement of the astragalus, carrying with it the external and often also the internal malleolus.

If the patient is seen early, there may be no great swelling, and it is often entirely possible to reduce the fracture without any anesthetic at all, with little or no pain. This is especially easy to do if temporary traction is used on the foot, by weight and pulley and a halter, when reduction may be spontaneous. However, there is to be no hesitation in using a full general anesthetic if it is necessary; for thorough reduction is absolutely essential to attain a good result. Pott's fracture gives a bad result, with serious disability and crippling, unless quite well reduced.

I wish to emphasize the importance of seeing to it that no lateral shifting remains,—that is, that the astragalus is made to come close to the inner malleolus, and that this malleolus is accurately in its correct relation to the inner side of the shaft of the tibia at its lower end. This can be judged by following the joint-line in the X-ray, around the corner on to the internal malleolus, seeing to it that there is no flaw in its continuous line after reduction. (Figs. 1, 4.)

That is to say, the mortise of the ankle-joint must be accurately restored, so that the astragalus is firmly steadied by the two malleoli on either side of it, and in correct relation to the tibial shaft. There must be no alteration of the weight-bearing axis; otherwise, there is bound to be significant disability.

When there is doubt as to the completeness of the reduction attained, an X-ray should be taken while the fracture is steadied by the hands, as shown in one of the illustrations here, before applying plaster. (Fig. 1.)

The fact is that this accurate reduction of the ankle-mortise is generally perfectly easy to do; but when a cast is put on, the foot must be firmly held while the plaster is hardening, against the inner malleolus, by inward pressure below the external malleolus, over the lateral surface of the foot, making counter-pressure outward over the lower third of the tibial shaft at the same time. I do not approve of causing much actual inversion of the foot, for I have seen disability result from it; it is *inward position* of the whole foot close against the internal malleolus, not *inversion*, that is needed.

It is also my belief that the upper end of the fibular fragment, even if quite long, should not be allowed to remain much out of place.

*Presented at the Norfolk County Medical Society All-Day Clinic, March 30, 1932.

Fig. 1.—Pott's fracture with the usual outward shifting of the astragalus.
Second film shows method of holding fracture in reduction with the hands, while making a film to confirm its accuracy. One hand shoves the whole foot medially (not, however, turning it into inversion to speak of), while the other hand shoves the shaft of the tibia laterally in counter-pressure.

I present herewith the X-rays of a patient in whom this was not attended to, and I feel sure that the displacement was a substantial factor in his impairment of function, as well as his deformity, which was considerable. (Fig. 2.) I did not personally treat this patient; but from his disability I drew the inference that practically anatomical reduction in ankle fractures is very needful. I have more than once corrected an overriding fibula by a small incision and open leverage with a little chisel; no fixation of course was needed. I am sure that this is correct procedure, though it is not usually thought of as really necessary.

Fig. 2.—Imperfect reduction of upper end of fibular fragment. I think that this had quite a little to do with the man's poor end-result, though it is also true that this was a worse fracture than usual, there being upward displacement of a piece broken off the lateral aspect of the lower end of the tibia. I did not personally treat this case.

As usual, drop-foot is to be avoided; and since the Achilles tendon is frequently under tension, it is well to relax it by flexing the knee, while putting on the cast, so that the foot can easily be held at a right angle.

The cast should reach from the toes to the upper part of the leg, and should, as I have said, accurately hold the foot and ankle steadily in anatomical relation to the tibia.

It is a very important thing to take an X-ray

Fig. 3.—Poor result due to lateral shifting, in spite of repeated attempts at correct reduction. My case.

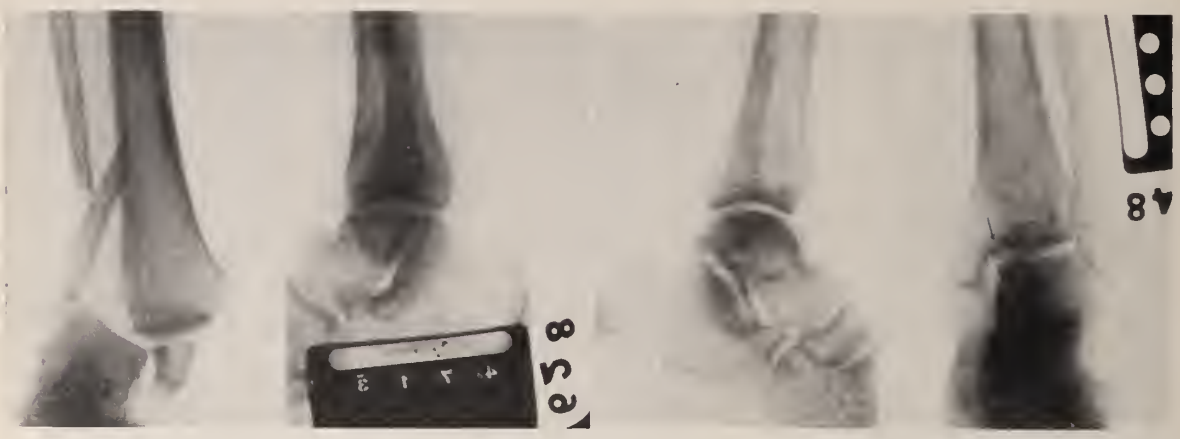

Fig. 4.—Considerable displacement with, of course, a complete rupture of the ligament binding the tibia and fibula together. This fracture, however, reduced itself spontaneously when the patient moved his foot about on the stretcher, while waiting for an anesthetic.
Second film, taken six weeks later, shows joint line of lower end of tibia correctly restored. There being no break in continuity of the curved line at the inner malleolus. Normal function.

after the cast is applied; for even though correct position has apparently been held, it may be found that the break is still not correctly aligned; and if this is allowed to continue, considerable disability is to be expected. I have found it necessary to readjust the position of the fracture in a fair percentage of my own cases. This is quite easily done by cutting across the cast at the level of the ankle-joint, a "casteotomy" as it were, if you will permit me such a term, and shifting the foot in its separated portion of the cast, as a whole, then fixing it with an added plaster bandage, in corrected position.

Difficulties

I have had one quite bad result in treating Pott's fracture. The man apparently sustained a complete rupture of the strong ligament that binds the tibia and fibula together just above the ankle-joint, so that the whole mortise was unusually badly loosened; and I am sorry to say that after I had treated him for several months, repeatedly trying to attain correct position, he still had imperfect reduction with marked disability. (Fig. 3). I now believe that I would have done well to have performed an open reduction, binding the tibia and fibula together with a new ligament made from deep fascia, to insure against subsequent widening of the mortise.

I should say, as a result of this experience, that it would always be well to carefully inspect the tibio-fibular region in any X-ray of a Pott's fracture, to be sure that the shadows of the two bones overlap as they normally do at the lower end. If it is found that they are not overlapped, a rupture of the lower ligament may be suspected, and unusual care taken to insure that the ankle mortise is not permitted to widen during treatment. After reduction, that is, the shadows should be demonstrated to be normally overlapped.

Non-Union

Non-union of one or the other malleolus is, I think, probably more frequent than is generally recognized. It may only be discovered

Fig. 5.—At first glance, good reduction, perhaps as good as the average, but close inspection shows that the internal malleolus is not really accurately back in place, as seen by noting the break still present in the contour of the joint, marked by arrows. This should be a continuous curved line.
The astragalus is still a little lateral, and therefore, does not quite accurately fit the joint surface of the tibia.

by chance, for the fact is that unless the X-ray happens to be taken in exactly the suitable plane, the bones may look to be united when in fact they are not united at all. I illustrate this here. (Fig. 6).

Fig. 6.—These X-rays were all of the same ankle after supposed bony union. Three of the views appear to show union, but notice that the other one, happening to be taken just right, shows there is really no union of the internal malleolus.
I am quite sure that non-union of this malleolus is much more common than usually supposed. It would indeed require films made at several different angles to completely demonstrate union in each case.
This man returned to full duty without complaint, and, therefore, bone-graft was not considered advisable, though easily done if any especial disability were present.

The fact is that ordinarily this lack of union does not lead to much trouble, and usually full work can be done as before. Sometimes, however, there is pain and weakness; and, if so, it is very easy to slide in a little bone-graft, after the Albee technique, as I did for instance in the case illustrated here. (Fig. 7). It is not necessary to fix the graft, simply sewing the soft parts over it. Union is immediate and firm, with complete restoration of function, always provided the ankle mortise is not widened, as I have stated above.

There is one complication after Pott's fracture that I have not found troublesome, though the texts specifically warn against it; I have not found any noticeable tendency at all to traumatic flat-foot, and have not found it necessary to use flat-foot plates or other appliances. I have very occasionally raised the inner border of the heel during convalescence.

Ambulatory Treatment

I wish now to discuss an ambulatory method of treating Pott's fracture by the use of the Delbet plaster of Paris splint. This is a French device, which has been known to orthopedists for years as a convalescent splint, though I think seldom actually used. It is well described in Scudder's textbook on fractures. It is not generally known, however, that the apparatus can be used practically to permit walking almost from the first.

The method is not one to be used without a great deal of care, and I think only in selected favorable cases. It has to be very care-

Fig. 7.—Non-union with pretty complete disability.
Second film shows solid union after insertion of small albee grafts; complete restoration of normal function, heavy laboring work being done without complaint.
Bone-graft is by no means always necessary in the case of non-union of the malleoli, for often there is no disability from the imperfect union.

fully fitted and watched, for, among other things, there is no padding used under the plaster. But I am able to testify that it works most excellently in suitable cases, and that it reduces the period of temporary disability to an astonishing degree. I first saw its use, by the way, in the clinic of Sherman, of Pittsburgh, whose personal expertness in treating fractures is familiar to all, particularly, of course, the treatment by operation.

The malleoli are firmly steadied and fixed by the plaster splint, and motion at the ankle is permitted from the first. It is painless. Weight-bearing can be begun within a very

Fig. 8.—Bilateral Pott's fracture, not quite typical. This is the man shown in one of the photographs. He walked out of the hospital in Delbet splints three weeks after he was hurt. The end-result here was a return to full function at ordinary laboring work.
Reduction here, as usual with the Delbet apparatus, was without anesthesia, by simple halter traction.

few days,—less than a week. The advantages of the method are many: swelling is rapidly reduced by muscular action, atrophy is avoided and stiffness of the joints is prevented; and the patient can go about his regular business within about two weeks from the time of injury. He cannot do laboring work, but can do office work perfectly well. He walks with a cane, or even without one if he wishes, bearing full weight on the injured leg without pain.

I illustrate these statements by the accompanying photographs. I wish especially to call attention to the colored man whose photograph was taken on the tenth day. You will observe that he is bearing all his weight on the injured leg without the slightest discomfort. The fact is, he walked out of the hospital, according to my instructions, on the sixth day after injury, bearing full weight. (Fig. 9).

The other case to which I direct especial attention is the man with Pott's fracture of both ankles. (Figs. 10, 11). He began walking after two weeks, and left the hospital ambulatory, as shown, three weeks after injury. You can imagine that with any ordinary treatment, he would have been confined to bed for several weeks, and to the chair for two or three months, since he had no good foot to depend on.

I wish now to call attention to two points in regard to this method of treatment: first, it is only to be used where the shaft of the tibia as such is intact; this is ordinarily the case in Pott's fracture, only the malleolus being broken off. Where, however, the weight-bearing portion of the shaft is not intact, the method is not applicable and will pretty certainly give trouble. The second point is this.—I suspect there may be a slightly increased

Fig. 9. Fig. 10. Fig. 11. Fig. 12 Fig. 13.

Photographs illustrating early full weight-bearing with Delbet plaster splint.

chance of non-union of the malleolus by this ambulatory treatment. I have, therefore, not committed myself to its routine employment; but it certainly can be made to give astonishing results, as I have illustrated.

Summary

Pott's fracture must be carefully treated, and very particular pains must be taken to see that the astragalus is pushed inward and kept in proper relation to the tibia. The ankle mortise must not be allowed to remain widened,—even, if need be, I believe, resorting to open reduction.

Non-union is not as rare as has been taught, and X-ray films, unless taken in several planes with specific reference to this point, may be deceptive. Non-union may give rise to no trouble; if it does, it is easily cured by a small Albee graft.

Finally, I illustrate an ambulatory method of treatment which is exceedingly satisfactory —the Delbet plaster of Paris splint. I am not ready quite yet to state that it gives an equal certainty of union of the malleoli as the older method of using a cast, and I have, therefore, not yet adopted it as a routine. It has, however, given exceedingly satisfactory results in the dozen or more cases in which I have used it, and it certainly cuts down the period of disability enormously.

712 *Botetourt Street.*

CANCER.*

CHAS. W. PUTNEY, M. D., Staunton, Va.

Cancer is a malignant new growth and is perhaps the most important surgical problem confronting the profession today. It is estimated that one hundred and twenty-five thousand patients die of cancer in the United States each year, and that two or three times as many are suffering from that disease in the same span of time. It ranks second among the causes of death and causes about 10 per cent of all deaths. One out of every ten men and one out of every eight women over thirty years of age will die of cancer, according to the present death rate. The span of life is lengthened as the death rate from other causes is reduced, but more people reach the "cancer zone" and the cancer death rate is relatively increased.

A specific cause for cancer is still unknown, but "So far as we know from observable regions of the body, cancer never springs directly from normal tissue" (Horsley). Chronic irritation or chronic inflammation is usually a predominatiing factor, but some apparently arise spontaneously from cell-rests. Local cells for some reason lose control and grow without normal supervision of the surrounding tissue to the destruction of the individual. Cancer begins as a localized painless lesion with only slight disturbance of function in the organ involved, but cancer of the bone may produce pain in the early stage. The increased vascularity of cancer causes an increase in the normal secretions in many locations. The secretions soon become abnormal and later may become hemorrhagic. It becomes toxic only after the blood supply to the tumor becomes impaired.

It is impossible in one short paper to give a complete resumé of cancer invading all the organs and tissues, so only some of the more important early signs, diagnostic procedures, and precancerous conditions will be stressed.

Biopsy and microscopical examination by a competent pathologist is perhaps the most important single diagnostic procedure in accessible lesions, suspected to be cancer, and if such a lesion does not properly respond to ordinary treatment within two or three weeks, a biopsy from its margin should be made. Of course if a lesion is frankly malignant a biopsy is useless and heroic treatment should be resorted to immediately. If the biopsy goes through healthy tissue, as in the breast, it should be followed immediately by radical operation. Bone lesions and others deeply situated can usually be detected by roentgenological examination before metastasis occurs unless delay is due to neglect or procrastination.

In taking a biopsy every effort should be made to block the circulation, both lymphatic and blood. The cautery is desirable to seal the lymphatics in obtaining biopsies from the skin, oral cavity, cervix, and rectum. In glandular organs, carbolic acid and alcohol may be used to seal the lymphatics. Melanomas and vascular sarcomas or deep seated lesions should have immediate radical operation if frozen section shows malignancy or a positive diagnosis is otherwise made. In one of my cases in which malignancy was suspected, and in which it was so situated that a complete radical operation was impossible, the biopsy was preceded by a massive dose of X-

*Read before the Augusta County Medical Society, at Staunton, Va., November 9, 1932.

ray therapy apparently with no ill effects resulting from biopsy. Biopsy is practiced in each of the many teaching clinics, I have attended during the past ten years in this country and abroad, though apparently more generally practiced on this continent than in Europe. In dealing with malignant growths biopsy is estimated to be about 97 to 98 per cent correct; while clinical diagnosis is only about 70 to 75 per cent correct. However, a well trained surgeon, at operation, will make a correct diagnosis from the gross specimen in 85 to 90 per cent of the cases, though frozen section during operation is much to be preferred in many cases, especially breast tumors, if a competent pathologist is available.

Breast: In the routine examination of every adult female, the breast should be examined with the flat hand against the chest wall, while the patient lies on her back with the arms extended above her head, though Bevan prefers the erect or sitting posture. If a definite tumor be felt, or a bloody secretion from the nipple is noted, or Paget's disease is present, it should demand immediate attention by a competent surgeon. It is futile to wait until there is elevation of the breast, retraction of the nipple, dimpling of the skin, pain and palpable glands in the axilla due to metastasis. Immediate early operation will increase the five year cures from 10 to 75 per cent if my interpretation of the statistics liberated from the best clinics is correct. It must be remembered that carcinoma forms from 82 to 84 per cent of all mammary tumors (Delbet). Small tumors without metastasis should be removed without cutting into the tumor until after it is removed. It should be cut open and examined, then and there, while the wound is being closed. A frozen section is much to be preferred. If the immediate diagnosis is cancer, a radical breast amputation is done while the patient is still under the anesthetic.

Lymphatic and Blood Vascular Systems: Cases presenting themselves with evidence of blood dyscrasia, especially if palpable lymph glands can be found, should have a complete blood count and repeated blood smears made by a competent pathologist. If a superficial gland can be found 1 or 2 cm. in diameter a biopsy should be made. A roentgenogram may be of utmost value in clearing up an obscure diagnosis, by revealing peribronchial glands, or it may show a metastatic tumor of the spine as a cause of an associated pain. If kept in mind, "lymphoblastomas" and "myeloblastomas," which also include lymphosarcoma, pseudoleukemia, splenomyelogenous leukemia, Hodgkin's disease, and the like, are readily diagnosed by the above procedure. It must be remembered that they are but a local manifestation of a generalized disease of the blood forming organs. All my cases of this group of more than three years' duration have had a fatal termination. This agrees with the results reported by Barney and others.

This must not be confused with metastasis to neighboring lymph glands from carcinoma of other organs with a blood picture of secondary anemia.

Skin: Inspection is the most valuable procedure in a routine physical examination.

1. Precancerous lesions, such as warts and moles, should not be overlooked, especially if situated so they will be frequently irritated. Simple warts and moles can be removed by electrocoagulation or electrodesiccation under local anesthesia. The essayist has removed more than a thousand during the past ten years with electricity, using a similar technique to that described by Pfahler (1926).

2. Keratotic spots with the epithelium in tact usually respond favorably to liberal use of soap and water followed by alcohol and then by some oily substance, preferably castor oil, as recommended by Budd. However, if there is an abrasion, X-ray or radium treatments should be given immediately, as malignant changes have usually begun. Cases under my observation have cleared up under this treatment.

3. Epitheliomas have a more angry appearance. They are usually situated about the face and are of two types—basal cell and squamous cell. They are true skin cancers and the type and extent should be determined before treatment is begun.

Mouth: All precancerous oral lesions, such as chronic ulcers, leukoplakia, or papillomas should be removed promptly with radium, cautery, or electrocoagulation. Cancer may also develop about the gums and alveola processes, and dentists can assist in the search for early cancerous lesions. Lesions that have the appearance of malignancy may be either tuberculosis, syphilis, or cancer, and rarely actinomycosis. The diagnosis can be readily determined by microscopical examination and a blood Wassermann; but because a patient has a positive Wassermann is no reason that he

may not also have a carcinoma, shown by biopsy. Syphilis of the mouth may even predispose to cancer.

We do not have as yet a practical accurate metabolic or serological test for cancer comparable to the Wassermann test for syphilis. The Bendein test, brought out in 1931, was hastily accepted by the British Empire Cancer Campaign, but like all other serological tests it has been found wanting.

Esophagus: Patients developing a gradual disturbance of the swallowing function without a cause apparent in the throat, or produced by a nerve lesion, or a history pointing to a constitutional cause, should have a stereoroentgenogram made of the chest. The function of the esophagus can be studied only by fluroscopy with an opaque mixture, and a bismuth or barium capsule. If negative, an esophagoscopic investigation should be made to rule out carcinoma of the esophagus. If a fungating growth is found, a biopsy can be undertaken. To be of value in cancer of the esophagus the diagnosis must be made early, and it must be positive.

Cancer of the Gastro-Intestinal Tract accounts for approximately 50 per cent of the total deaths from cancer; and cancer of the stomach accounts for approximately one-third of all deaths from cancer, according to recent statistics. Carcinoma of the stomach is seldom recognized in time to effect a cure; therefore, it behooves us to be constantly on the alert for symptoms of progressive gastro-intestinal dysfunction in patients over 30 years of age. Some gastric cancer cases give an ulcer history; others do not. Such cases should be taken seriously, and studied carefully by a competent surgeon and roentgenologist. If fluoroscopic examination reveals pathology, and if a gastric filling defect is found on the plates and on the gastric side of the pylorus there are three chances out of four of it being a cancer. Prepyloric lesions and lesions on the greater curvature have a greater chance of being malignant.

One must not be led astray by a coincident positive Wassermann. Syphilis of the stomach is relatively rare, while cancer of the stomach is distressingly frequent. At the Mayo Clinic it is claimed that 68 to 70 per cent of gastric cancer results from gastric ulcer. Whether cancer develops on an ulcer or as a primary lesion without preliminary ulcer, is of minor importance. The lesion should be cured or removed early. McCarthy's experience, according to Alarez, is that an ulcerated gastric lesion 2.5 centimeters in diameter is usually malignant and one smaller may be malignant. Quoting Horsley "No case of cancer of the stomach has ever been known to recover except by operation." Following this reasoning, only gastric ulcers smaller than 2.5 centimeters in diameter situated more than an inch from the pylorus on the lesser curvature should be treated medically and then only when checked repeatedly by X-ray.

Carcinoma of the intestines is usually recognized by a roentgenologist when a series of plates are taken following a bismuth meal, or a barium enema if situated in the colon. Occult blood in the stool develops early, followed by increasing obstipation of the bowel, but may alternate with diarrhea. Symptoms of partial obstruction soon develop unless in the ascending colon. Carcinoma of the large bowel is much more frequent than in the small bowel. Carcinoma of the cecum or ascending colon often develops marked anemia before other symptoms appear. It is fortunate that metastasis takes place relatively late in carcinoma of the large bowel, though early in the small bowel. One should not wait for a palpable mass, but operation should be done promptly. Whipple (*J. A. M. A.*, 1931; Vol. 97, No. 26) has pointed out the advantages of a cecostomy preliminary to resection of the colon or rectum. I have found this to be quite an advance in colonic surgery.

It has been my practice for many years in working up cases with chronic or progressive gastro-intestinal symptoms, to have also a roentgenogram made of the gall-bladder, according to the Grahm-Cole technique. This will often reveal evidence of a gall-bladder that should be removed and in a small per cent of cases will be found malignant. In my limited experience I have a patient apparently well today upon whom I operated two and one-half years ago and removed a chronically diseased, thickened gall-bladder filled with stone, and the pathological examination by Dr. Budd revealed an adenocarcinoma. Such malignant cases would soon become inoperable and hopeless, if treated medically.

The Rectum: Every patient presenting a major complaint should have a routine digital rectal examination, as a part of the general physical examination, and those complaining of an abnormal rectal discharge, especially

bleeding, or change of frequency, character, or amount of stool are entitled to a proctoscopic inspection. According to Bindley, "All cancers of the rectum can be diagnosed by a digital examination in conjunction with a proctoscopic inspection." A roentgenological examination with a barium enema will be of considerable value in showing the extent of the disease when the lesion involves the recto-sigmoid.

The cancer may be at the anus, just above the sphincter, or above the examining finger. A small piece may be carefully removed for biopsy, through the proctoscope. All too frequently a "hemorrhoid case" is posted for operation without a digital or proctoscopic examination having been made, then to find some weeks later a recurrent carcinoma which should have had a preliminary colostomy followed by radical resection of the rectum at the time the "hemorrhoidectomy" was performed. It is just as important to examine the rectum when the history or symptoms suggest pathology as it is to examine other organs.

Urology: In making digital examinations of the rectum on the male one must not only bear in mind carcinoma of the rectum, but must examine for the enlarged nodular prostate. A carcinoma of the prostate usually begins in the posterior portion, with or without hypertrophy, and is often inoperable when urinary symptoms develop. The hard nodular indurated prostate is usually malignant, and an early radical operation should be done while the carcinoma is still confined within the prostatic capsule. X-ray of the lower spine and pelvic bones often reveals metastasis before urinary symptoms develop.

Patients with a palpable mass in the region of the kidney should have a complete urological examination, including especially a pyelogram, with search for a filling defect; and a differential kidney function test. Most unilateral kidney tumors are malignant and should be removed promptly. The Wilms' tumor (sarcoma of the kidney in children) will temporarily respond to efficient X-ray therapy for two or three weeks. Nephrectomy done at that time will give the best permanent results.

In adults, haematuria occurs in 75 to 80 per cent of patients with renal tumor (Dean and Pack). Haematuria may be produced by either one of many causes (about 25 in number), but carcinoma of the genito-urinary tract is so frequently the cause of this symptom that it is imperative that a urological study be made at once by a competent urologist to determine its cause. In carcinoma the bleeding may not return again for six months and then it may be inoperable.

Gynecology: The source of leukorrhea in the young adult female is usually an inflammatory process in the cervical glands, though an additional source may also be found in the vulvo-vaginal glands, fallopian tubes, etc. Chronically inflamed, eroded cervices and cervical polyps are precancerous conditions and should receive proper attention. As a result of the continuous effort on the part of nature to close the breach of the erosion, more and more immature cells are continually called out until the normal tendency is broken and the embryonic cells grow wild in cancerous form. I have treated more than a hundred such precancerous cervices with electro-cautery or surgical diathermy with uniformly good results, and none of these cases are known to have developed cancer. This is in agreement with reports of several thousand cases so treated by Bartlett and Smith (*J. S. G. & O.*, 52:249, February, 1931), Huggins (*Annals of Surgery*, 94:45, September, 1931) and others. It would seem, therefore, that the electro-cautery and surgical diathermy are not only curative treatments for the chronically inflamed cervix, but also seem to be a preventive treatment for carcinoma of the cervix.

The patient with a straw colored discharge, or with blood stains between periods, or with increasing watery leukorrhea after middle life or metrorrhagia or pelvic tumor is presenting cause for alarm. It has been found that even fibroids frequently predispose to cancer. Such patients should have a careful examination immediately by one thoroughly trained in gynecological surgery. Speculum examination is of equal importance with the bimanual, although an excellent teacher in one of our largest postgraduate medical schools states that he can determine as much about the cervix with the touch of his finger as by visualization through the speculum. I believe this to be dangerous teaching. Too many women will succumb to cancer before all of our practitioners develop such an acute sense of touch. "Seeing is believing," and this implies looking with the natural eye. It is futile to wait for profuse hemor-

rhage, bladder, or rectal symptoms. Immediate diagnostic curettage or biopsy of the ulcerated, indurated cervix may be necessary to prove or disprove the presence of cancerous degeneration. In Vienna corroborative tests are also being used in suspected carcinoma of the cervix, such as:

a. Inserting a probe into the suspected area. If the area is cancerous it will meet with a similar resistance as though it were passed into putty or cheese.

b. Copper sulphate, 10 per cent solution, is applied to the eroded cervix. If the eroded area is sealed it is probably not cancerous. If the eroded area bleeds it is strongly suspicious of cancer, and a biopsy should be done.

c. An aqueous solution of iodine (Lugol's solution) is used (in the second Frauenklinik) by making applications through the speculum to the cervix. The normal mucous membrane is colored a deep brown in a few seconds, but if there is a cancerous area it remains colorless, forming a distinct contrast with the surrounding tissue, observed by a magnifying glass. Microscopical examination of scrapings fro mthese colorless areas determine whether it is a harmless cornification or early cancerous degeneration (*J. A. M. A.*, October 31, 1931). These methods are only of value in the early diagnosis of cancer of the cervix.

d. A cystoscopic and proctoscopic examination is done on every case of carcinoma of the cervix to determine the extent of involvement of the bladder and rectum before treatment is begun.

The greatest number of carcinomata uteri occur in the cervix (about 4 to 1), since it is more exposed to trauma and chronic inflammation. Carcinoma of the cervix becomes inoperable at an earlier stage since its lymphatics lead more directly to important structures than do lymphatics of the corpus uteri.

Treatment: Eternal vigilance on the part of each and all, patients and physician, is the price of prevention and cure of cancer. All precancerous lesions must be sought and removed with the knife or destroyed by cautery, surgical diathermy, or radiation, as is proper for the case at hand. The practitioner and public must be repeatedly reminded of the early signs and symptoms of cancer in the various organs, and they should be taught that it can be cured if completely removed in the early stage, and that emaciation and cachexia are not only symptoms of cancer, but are signs of impending death. The early stage of every case of cancer is an emergency. Early and wide excision of the primary lesion while the cancer cells still remain local is the treatment of choice. The cancer cells must be completely removed or completely destroyed. According to W. J. Mayo, more than 72 per cent of cancer cases are cured if properly operated before the cancer cells have extended beyond the primary focus, and only 19 per cent are cured after this stage.

We know that not all cases of cancer will give signs and symptoms in time to permit us to effect a cure, but we know that with our present knowledge of cancer we must make an early diagnosis and begin treatment immediately in order to secure the best results in the greatest number of cases. We must remember that the physician who fails by neglect of a complete physical examination or neglect of necessary diagnostic tests to make sure that the symptoms complained of are not due to cancer, fails to give his patient the chance of cure to which he is entitled; and, according to the late Dr. John Osborn Polak, "Every failure to make a diagnosis of incipient cancer costs a human life."

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Professional Building.

THE TREATMENT OF TOXIC GOITER.*

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While there are some dissenting opinions as to the best procedure to follow for the treatment of toxic goiter, the weight of authority is mostly on the side of surgery. It is true that a small number of cases may be relieved by medical means, and perhaps a slightly larger number by X-ray therapy, nevertheless in general the best interests of the patients with toxic goiter are served by surgical removal of the major portion of the gland. In our opinion infections in the upper respiratory tract probably have something to do with the onset of toxic goiter, and are sought for in patients complaining of this trouble, and eradication of the infection if found is advised. Furthermore, we divide toxic goiter into two classes, exophthalmic goiter and toxic adenoma; and we feel that in recognizing the distinction between these two it is important also to recognize the different courses which they run. Exophthalmic goiter is much more rapid in onset and tends to have periods of remission and exacerbation, while toxic adenoma is gradual in onset and tends to run a smoother and less severe course. Compound solution of iodine induces a remission in the progress of exophthalmic goiter and, therefore, gives more striking and satisfactory results than it does with toxic adenoma. Iodine does actual harm when given to a patient with a non-toxic adenoma, but since it has a favorable influence on toxic cases Lugol's solution is given in the latter cases but not as marked improvement is expected as in exophthalmic goiter.

The routine treatment for toxic goiter will be briefly given and variations from this routine indicated by complicating factors will be illustrated by case reports.

The diagnosis is usually not difficult but in a small group which has neither exophthalmos nor enlargement of the thyroid it may be confusing. When the diagnosis has been made and operation decided on, the patient is put at rest, as a rule in bed, and is given Lugol's solution (thirty drops a day). When there is excessive nervousness small doses of some barbiturate are given throughout the day, frequently at bedtime. Digitalis and other specific cardiac drugs are not used unless indicated by definite failure of the circulation.

The patient is requested to avoid discussion of the operation and is almost never told when the time has come. Immediately before operation a sufficient dose of some barbital compound (generally sodium amytal, 9 grains) is given to make the patient very drowsy or frequently soundly asleep. In order that this latter procedure may not appear unusual, throughout the pre-operative hospital stay dummy capsules are given daily. Shortly before operation morphine and atropin are given. If these sedatives have the desired effect the patient arrives in the operating room in such a drowsy state that there is later no remembrance of the event, and thus is avoided the explosion which so many of these patients have when prepared for operation fully conscious. However, in spite of every precaution the nerves and heart occasionally are so accelerated that operation has to be abandoned after it has actually been started. In very severe cases it may be wise to stop after resection of one lobe, though it must be remembered that when an

*Read at the meeting of the Southside Virginia Medical Association, December 13, 1932, in Petersburg, Va.

entire lobe remains there is available just that much more tissue to produce severe post-operative hyperthyroidism.

The choice of the anaesthetic is important. The operation can readily be done with local anaesthesia with little pain but it is a tedious ordeal for the patient. The principal advantage of local anaesthesia is the warning respiratory difficulty when the recurrent laryngeal nerve is irritated. With a well-trained anaesthetist and light gas anaesthesia this warning can readily be recognized, and for this reason we use gas-oxygen throughout the operation. It is essential to remove the major portion of each lobe and leave in place that portion along the trachea, which protects the recurrent nerves and the posterior portion which protects the parathyroid glands. Accurate hemostasis is obtained by ligature and suture and small rubber drains are generally used.

After operation there is invariably an increase of hyperthyroidism but this is now rarely alarming. Lugol's solution is given by proctoclysis during the first day or two, and then the usual dose by mouth is resumed. The immediate improvement in these patients is most spectacular; as a rule by the third day the unpleasant symptoms have subsided and they feel like different people. As before operation, nourishing food is given and in most cases readily taken. Ice-bags over the heart lessen the discomfort of the pounding heartbeat. Opiates and barbiturates alleviate the pain and nervousness.

Aside from hyperthyroidism, the most important post-operative complication is hemorrhage. It is seldom alarming but occasionally fills the neck and unless promptly relieved may lead to disaster from pressure on the trachea.

Paralysis of one cord resulting from division of the nerve is a rare occurrence and nothing can be done about it. Paralysis from trauma occasionally happens and clears up in about six weeks. Paralysis of both cords should never occur if the proper precautions are observed. If both cords are paralyzed and adducted, tracheotomy is necessary.

Post-operative tetany is also a rare complication. The mild cases are controlled by calcium administered by mouth or intravenously, the more severe ones by parathormone and calcium. It is very rare that continued medication is necessary.

A more frequent and fortunately less serious post-operative condition is hypothyroidism. This is not an immediate or prolonged complication and is first indicated by an excessive gain in weight. It can obviously be controlled by proper doses of thyroid extract, and as a rule disappears in a few weeks.

Finally, an exceedingly rare but very distressing complication should be mentioned, *i. e*, increasing exophthalmos after operation. No adequate explanation of exophthalmos has ever been given so that there has been no adequate treatment. A few cases have been reported where the protrusion progressed to actual destruction of the eyes. Recently, Noffziger found that there were edema and hypertrophy of the orbital contents, especially the rectus muscles, and he reported good results from decompression of the orbit by removal of the bony roof.

When the patient leaves the hospital good hygiene, especially mental, is necessary. He should be protected from all physical and mental strain as far as possible. Lugol's solution should be continued in small doses (five drops daily) for about three months. Where there has been great weight loss a high caloric diet should be advised, and all cases should drink water freely. We do not feel that any particular water distilled or otherwise has any special virtue. Stimulants of all kinds, if used, should be in great moderation, preferably they should be avoided.

When the whole regime is carefully followed the mortality and morbidity from operation will be low and the results excellent. The following cases illustrate the typical condition and some of the more frequent complicating factors.

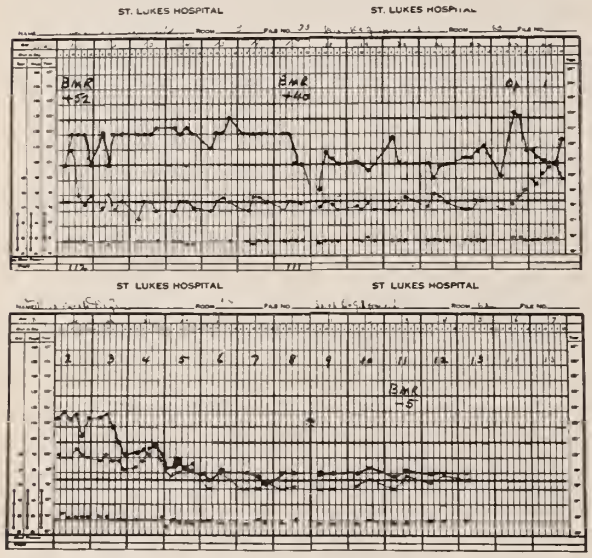
Report of Cases

Case 1. *Exophthalmic Goiter, Severe but Uncomplicated:* S. D. G. (No. 35,426 St. Luke's Hospital), a girl of 18 years, had during the past few weeks been nervous and had noticed forceful and rapid heart action after slight exertion. There had been no tremor of the fingers, no loss of weight, and no obvious change in the appearance of the eyes. Coincident with the onset of nervousness, enlargement of the thyroid gland had been observed. She had not taken iodine. Up to this time she had had no serious illness.

On physical examination there appeared to be slight exophthalmos, the thyroid gland was

two to three times normal size and quite firm on palpation, there was no fine tremor of the extended fingers, the heart was normal except for a rate of 150, the blood pressure was 150/50. Otherwise the physical examination was negative. Routine laboratory examinations revealed nothing of significance. The basal metabolic rate was plus 52.

The diagnosis of exophthalmic goiter was

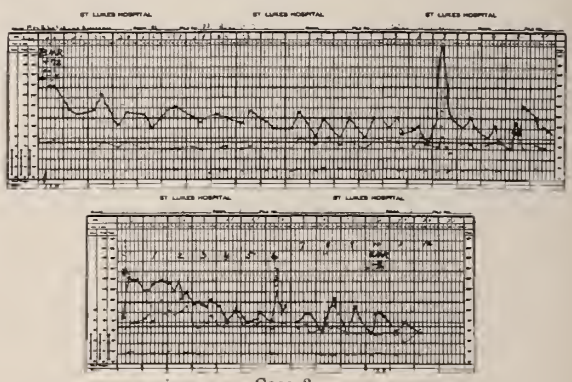


Case 1.

made and operation was advised. After one week of the usual treatment the pulse rate was 116 and the basal metabolic rate plus 40. She continued to improve, the pulse rate coming down to 100, and was operated on twelve days after beginning treatment. The post-operative course was very satisfactory. On the twelfth post-operative day the metabolic rate was minus 5, pulse 80, and weight 111 lbs., a loss of one pound. She has been seen frequently since leaving the hospital and reported that she was perfectly well and has gained fifteen pounds in weight.

Case 2. *Exophthalmic Goiter, Uncomplicate but Very Severe:* H. W. A. (No. 33,779 St. Luke's Hospital), a married woman, aged 33 years, had been troubled first with poor vision and then increasing nervousness and tachycardia. During the three months since her first complaint she had lost twenty pounds in weight. She had not taken iodine.

On admission to the clinic there was marked exophthalmos, marked symmetrical enlargement of the thyroid gland, slight tremor of the extended fingers, pulse rate 140 to the minute and blood pressure 170/70. The heart showed no organic lesion. The basal metabolic rate was plus 72. She was put to bed in the hospital on the customary regime and improved steadily. On the seventeenth day, with a pulse rate under 100, after a dose of the usual amount of sodium amytal preparatory to operation, she was sleeping quietly until the hypodermic of morphine and atropin was



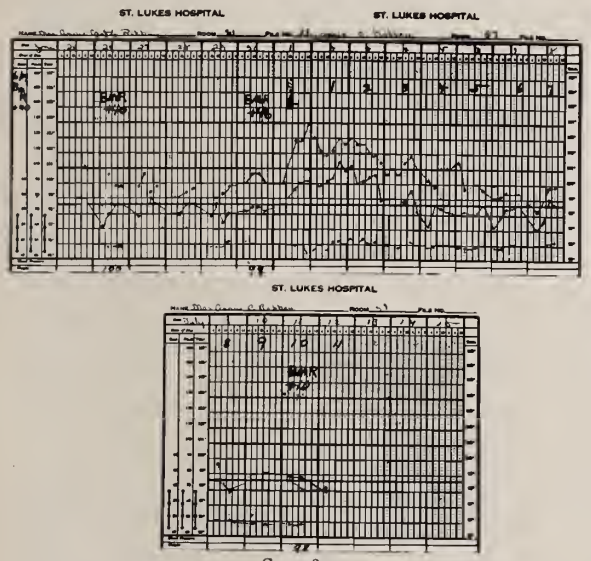
Case 2.

given. She then became wide-awake and very nervous, and when she reached the operating room the pulse rate was 180. Operation was abandoned. Five days later with the same preparation except omission of morphine and atropin she was successfully operated on. The convalescence was at first stormy but later uneventful. On the tenth post-operative day the basal metabolic rate was minus 2, and weight 123 lbs., a gain of three pounds. Since leaving the hospital she has gained thirty pounds in weight but the metabolic rate has remained normal.

Case 3. *Toxic Adenomatous Goiter Uncomplicated:* A. C. R. (No. 33,569, St. Luke's Hospital), a widow, 49 years of age, had first noticed about eight months ago a small nodular goiter. During the past two months it had grown larger and she had noted tachycardia and nervousness but no loss of weight. Physical examination on admission to the clinic showed no exophthalmos, the thyroid considerably enlarged by nodular masses the right lobe being larger than the left, no tremor, pulse rate of 128 to the minute, and blood pressure 168/90. There was no organic heart disease. The basal metabolic rate was plus 40. Infected tonsils and teeth were found and removal advised.

She was put on rest and Lugol's solution at home and one week later was admitted to

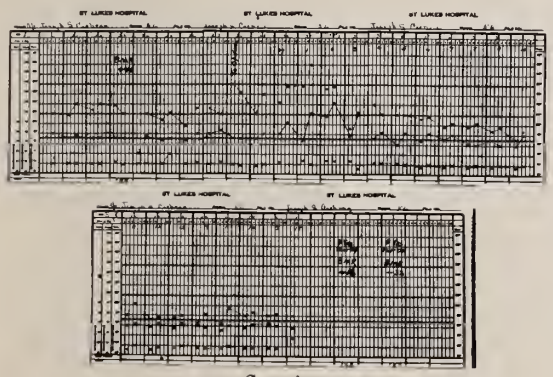
the hospital for operation. On the ninth day of treatment the basal metabolic rate was plus 40 and pulse 100. On the thirteenth day the basal metabolic rate was plus 46 with pulse rate about the same. Operation was done on the fourteenth day of treatment and was fol-



Case 3.

lowed by a smooth convalescence except that there was left recurrent laryngeal nerve paralysis which cleared up in about six weeks. The basal metabolic rate on the tenth post-operative day was plus 10, weight ninety-eight, a loss of two pounds. Two years after operation she had gained twenty pounds and felt well.

Case 4. *Toxic Adenomatous Goiter Complicated by Cancer of the Stomach:* J. S. C. (No. 22,520, St. Luke's Hospital), a married



Case 4.

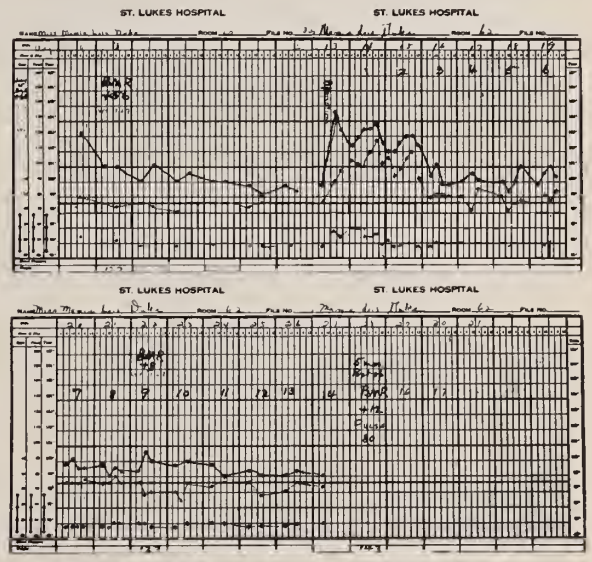
man, 59 years of age, came to the clinic for treatment for indigestion, nervousness and loss of weight, all of about nine months' duration. He had lost thirty pounds in weight, had no appetite and vomited frequently. After slight exercise the heart became rapid.

Physical examination revealed no exophthalmos, and a thyroid enlarged more on the right side and about three times normal size. There was no tremor, the pulse rate was 96, blood pressure 135/75, and basal metabolic rate plus 23. X-ray examination of the stomach showed an advanced carcinoma of the pylorus. This latter condition was obviously the more important so the growth was resected. After a stormy convalescence the patient recovered.

During the next nine months he continued weak and nervous, and lost about thirty-five pounds in weight making a total loss of sixty-five pounds from his average weight. The pulse was 108, blood pressure 124/70, and the basal metabolic rate plus 40. Operation on the thyroid was advised.

On the ninth hospital day he was taken to the operating room for operation with local anaesthesia. As soon as the novocain was injected into the skin the pulse became too rapid to count, and he was therefore returned to his room. Two days later he was successfully operated on and made a good recovery. Three years after operation the basal metabolic rate was minus 16 and he had gained sixty pounds in weight. It is now seven years since the resection of the stomach and six years since thyroidectomy and he appears perfectly well.

Case 5. *Recurrent Exophthalmic Goiter:*



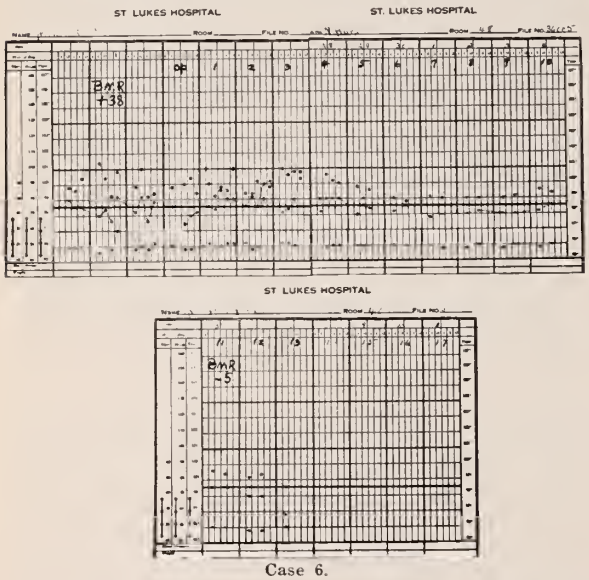
Case 5.

M. L. D. (No. 33,858, St. Luke's Hospital), an unmarried woman, aged 29, had come to me

four years ago for operation on a typical exophthalmic goiter. Before operation the basal metabolic rate had been plus 60 and plus 57. After operation it had been plus 8. She had remained well for two years when there had been a return of her symptoms. Lugol's solution and X-ray treatments over the thyroid had given her great relief, the basal metabolic rate before treatment having been plus 31 and after treatment plus 1.

However, one year later, the patient returned to the hospital with the thyroid enlarged, moderate exophthalmos, loss of weight, nervousness, and tremor. The pulse was 120, blood pressure 111/76, and the basal metabolic rate again plus 60 and plus 56. Operation was successfully done and on the ninth post-operative day the basal metabolic rate was plus 8 with the pulse rate 68. Five months after operation there was a gain of twenty pounds in weight, a pulse rate of 80, and a metabolic rate plus 12.

Case 6. *Exophthalmic Goiter with Auricular Fibrillation, No Exophthalmos, Thyroid Gland not Palpated but Found Enlarged at Operation:* S. N. H. (No. 36,005, St. Luke's Hospital), a married man, aged 65 years, came to the clinic complaining of nervousness and

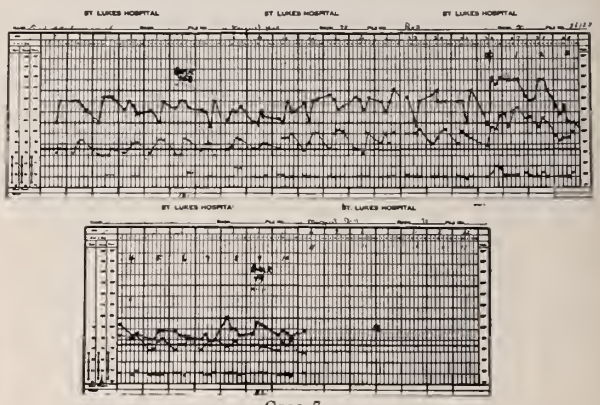


Case 6.

extreme weakness for the past four months, during which time the heart had been rapid and irregular. He had taken iodine solution for several weeks without relief so stopped it but one week ago it had been given again.

Examination on admission to the hospital showed no exophthalmos, the thyroid gland not palpated, the heart irregularly irregular, the blood pressure 128/70, the pulse rate 140, and the basal metabolic rate plus 38. At operation the thyroid gland was found beneath the clavicles and considerably enlarged. On the fourth post-operative day the heart became regular and except for brief periods remained regular. On the eleventh post-operative day the pulse was 80, basal metabolic rate minus 8, and weight one hundred and thirty-five pounds, a loss of six pounds.

Case 7. *Exophthalmic Goiter with Marked Thyroiditis:* M. P. B. (No. 36,123, St. Luke's Hospital), an unmarried woman, 25 years of age, came to the clinic complaining of nervousness of two or three months' duration, rapid heartbeat, enlargement of the thyroid gland, and edema of the upper eyelids. She had taken Lugol's solution for about two weeks but had discontinued it one week ago.



Case 7.

Examination on admission disclosed slight protrusion of the eyes, the thyroid gland about three to four times its normal size and very hard, extreme nervousness and marked tremor. There was no organic heart lesion, the pulse rate was 124, and the blood pressure 134/66. The tonsils were hypertrophied and inflamed, and it was advised that they be removed at a later date.

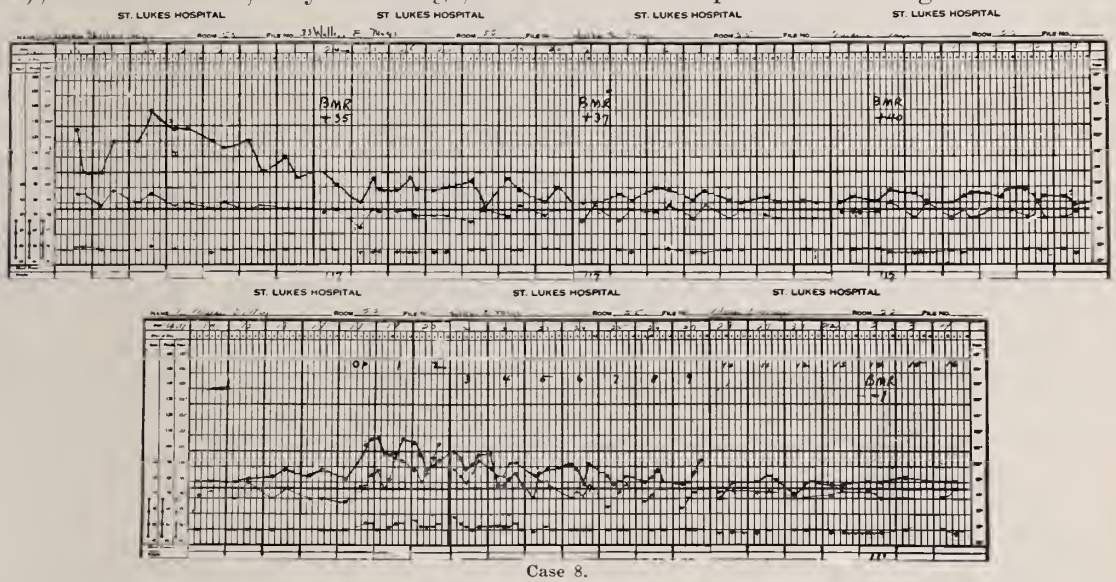
The basal metabolic rate was plus 64 and ten days later plus 56. She was put to bed and given luminal and Lugol's solution. While her general condition improved, her pulse remained rapid. During the first week in the hospital the temperature reached 99° in the afternoons; during the second week it rose to 100°. Frequent careful examinations failed to reveal a cause for this fever. It was then

decided to operate on account of the probability of the thyroid being the cause. Though for two days following the operation the pulse remained around 140, her condition was at no time alarming. The microscopic picture was interesting in that there was a marked infiltration of leucocytes throughout the gland, apparently giving a good explanation for the fever. The temperature and pulse soon receded to normal. On the ninth post-operative day the pulse was 90, basal metabolic rate plus 9, weight ninety-six pounds, a loss of five pounds.

Case 8. *Exophthalmic Goiter with Failing Heart:* W. S. M. (No. 35,137, St. Luke's Hospital), a married man, 53 years of age, came to the clinic with the following history. For the past two and one-half years he had been so ill that he had been unable to work and had been confined to his home most of the time. During two years of this time he had complained of shortness of breath and precordial pain, and his trouble had been diagnosed as "heart disease." His blood pressure had been consistently low, the systolic usually being from 85 to 90. Four months before coming to the clinic, he had noticed increasing nervousness and coincident with this condition enlargement of the thyroid and protrusion of the eyes. He had had a marked tremor of the fingers and had lost about twenty-five pounds in weight.

Examination confirmed the exophthalmos and tremor. The thyroid was very hard and symmetrically enlarged to about five times its normal size. Other physical abnormalities were as follows: The veins of the neck were greatly distended; the heart was somewhat enlarged and fibrillating; there was a systolic murmur heard best at the apex; the pulse rate was 140 and blood pressure 140/60; the abdomen was distended and apparently contained a small amount of free fluid; the feet and legs were swollen.

The patient was put to bed in the hospital. Metabolic test was not done until a week later when the rate was plus 35 and the pulse was 100. At the end of the second week the basal metabolic rate was plus 37 and the pulse 80. At the end of the third week the rate was plus 40 and the pulse 80. During this time he had appropriate doses of Lugol's solution, digitalis, and later quinidine. As the rate became slower the pulse became more regular and his general improvement was marked.



Case 8.

On the thirty-second day after admission thyroidectomy was done which was followed by a very satisfactory recovery. On the fourteenth post-operative day the basal metabolic rate was minus 1 and the weight 111 lbs., a loss of six pounds. One month after operation the electrocardiogram was normal. Two months after leaving the hospital he had gained thirty-five pounds in weight.

Summary

The routine treatment of toxic goiter together with post-operative complications is discussed. Eight cases are presented to illustrate some of the individual problems which must be met aside from the usual routine.

1000 *West Grace Street.*

DIAGNOSIS AND TREATMENT OF DISEASES OF THE RECTUM AND SIGMOID.

R. S. ANDERSON, M. D., Statesville, N. C.
Davis Hospital.

There are many diseases of the rectum, but only a few of the most important will be taken up in this paper and discussed very briefly as to the diagnosis and treatment. Diseases of the rectum are very important, and a good many go undiagnosed and untreated simply because of the fact that the patient can put up with minor ailments and does not consult a physician for such things until they become very serious and it becomes too late for treatment to be of any value. On the other hand, as every one knows, most physicians pay little attention to rectal complaints, and, this, being the case, lots of conditions therefore go undiagnosed. I know of nothing more satisfying to a patient than to get such complaints remedied. They are very thankful when they are relieved of such conditions because they are very aggravating.

Most patients who complain of a little rectal irritation or a little rectal discomfort are given a little salve or suppository and told they will be all right and to return if there is further trouble.

The diseases will be taken up as they occur most commonly in order.

Hemorrhoids

Hemorrhoids are very common and give patients considerable discomfort. This condition may be classified as internal hemorrhoids and external hemorrhoids. There are other classifications more in detail, but this probably is the most simple and will describe the conditions that we meet.

The diagnosis of hemorrhoids is very easy. The external hemorrhoid is very plainly seen and gives the patient considerable trouble. The internal hemorrhoid may not be so plainly seen, but the patient will give a history of the hemorrhoids protruding after stools and at times very much bleeding. The hemorrhoids may become thrombotic and produce a great many symptoms. The patient usually comes complaining of hemorrhoids, bleeding, and protrusion after stools and cannot put up with such a condition any longer. The external hemorrhoids are also very uncomfortable to the patient and may present themselves as external tags acompanied by small varicosities; they may bleed slightly at times. They are very irritating.

All these patients should have proctoscopic examinations to rule out any malignancy. Also a sigmoidoscopic examination should be done to rule out malignancy. Such examinations are not done particularly to diagnose the hemorrhoid condition, but to rule out malignancy which is exceedingly important. Having made the diagnosis, the treatment is very simple.

The treatment for hemorrhoids is as follows: For internal hemorrhoids that are not very severe, not giving many symptoms, are small, and have no associated infection as a cryptitis, etc., one may use the injection treatment, which consists of 5 per cent solution of quinine urea hydrochloride. This is injected very slowly, using an analscope to give good exposure, and preferably a long Luer needle attached to a Luer syringe. The solution must be injected very slowly into the hemorrhoid until the hemorrhoid is moderately distended. Sometimes 1 to 2 c.c. is injected in a hemorrhoid. One has to judge according to the type of hemorrhoid he is dealing with. Never inject too much, as it is very serious and may produce a severe slough. One may inject one hemorrhoid at one sitting and have the patient return daily for three or four days until all the hemorrhoids are injected, and keep the patient under close observation. This is a fairly satisfactory procedure, but I would prefer and advise to have the patient admitted to the hospital, and inject all the hemorrhoids at one time and get the condition over at one sitting. It will be necessary for them to stay in the hospital only a day or so, and I am quite sure this is the best procedure in handling these patients where the injection method is used.

The most important thing in the injection method is to be sure you are dealing with the type of hemorrhoid that should be injected, this being only the internal type and with no associated infection. Another important thing to keep in mind is never to inject too much of the solution because serious results have been obtained from too much fluid being injected.

Now arises the question as to what types of solution are the best for this method. There are various solutions used, such as carbolic acid and others, but there is no question that quinine urea hydrochloride solution, 5 per cent, is thus far the most satisfactory, and is the one used most universally.

Operative treatment for internal hemor-

rhoids: If the hemorrhoids are very bad, it is probably best to have operative procedure rather than injection method. The operation for hemorrhoids is very simple, the most satisfactory and the one that gives the best results being no doubt the dissection and ligature method. This procedure is carried out very easily. Having exposed the hemorrhoids satisfactorily, a clamp is applied near the edge of the hemorrhoid and the hemorrhoid is lifted up and dissected out entirely. Now we have only a small base to ligate. One may apply a clamp and excise the remainder of the hemorrhoid and then transfix with chromic catgut the base and a few sutures inserted outward where the hemorrhoid was dissected away, leaving the outer angle free for drainage. There is no question that this type of operation is the most satisfactory, and the patient has less discomfort following such a procedure. After the operation is completed, it is best to insert a small rubber tissue drain with a small piece of gauze included for at least twenty-four hours. It is better to leave it in for two to three days.

There are various operations described for hemorrhoids, such as clamp and cautery, and many others may be mentioned, but, as stated above, I am convinced that the above operation described is the best.

The post-operative care of these patients is very simple and will not be discussed in this paper. That usually consists of liquid diet, the drain removed in twenty-four to seventy-two hours, warm compresses to the rectum for twenty-four hours, and olive oil retention enemas every twenty-four hours. The rectum is irrigated, using a small catheter with witch-hazel solution, and in a few days the patient is put on a very soft diet and instructed to take some mineral oil two or three times a day. It is exceedingly important to keep the rectum clean following these operations.

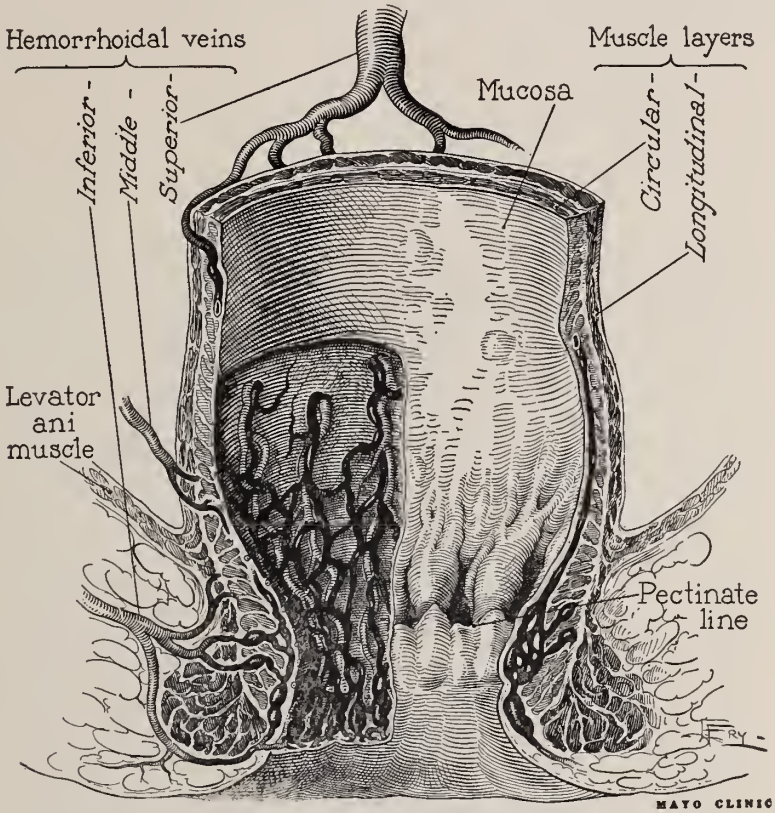


Fig. 1.—Diagrammatic representation of the vascular supply of the anus and rectum.

External hemorrhoids: The treatment is surgery. External hemorrhoids should never be injected. The only procedure that is of any value in this type of condition is an operative procedure. External hemorrhoids may be excised very simply, and where there is occasionally a small external and internal hemorrhoid, both can be excised at the same time, using the same operation described above. The point I wish to stress here about the external hemorrhoid is the injection method should

never be used, because it is extremely painful and will produce sloughs.

Pruritus Ani

This is an exceedingly common condition and one is more or less confronted with it daily. It is a very aggravating condition for the patient. There is a constant itching and stinging which nothing seems to relieve. Such a patient has tried all kinds of remedies, and says that nothing gives relief. The diagnosis is obvious. There is a redness about the rectum; there may be little cracks and wrinkles in the skin, scaly at times and other appearances.

The only treatment I know of that will give any relief for this particular condition is injection of a 40 per cent solution of alcohol in the skin around the anal margin. It may be injected at two positions—anterior and posterior, and from 6 to 8 c.c. on each side. It is injected just as one would inject underneath the skin in doing a local anesthesia. This treatment gives marvelous results and is the only thing that I know that will give a complete cure. It may be necessary to inject more than once, but usually one or two injections are sufficient. Here, again, do not use too much solution. Six to 8 c.c. or probably a little more will be sufficient.

Fistula in Ano

Fistula in ano is a very common condition. We were once taught that such fistulas were tubercular. Occasionally one may be tubercular, but the majority of such conditions are not tubercular. It is a very aggravating condition for the patient. The past history is of importance. One may take a probe and find the fistula very easily.

Treatment: There is only one treatment for fistula in ano, and that is surgery. Lay the fistulous tract wide open, passing a groove director first to be sure that you are in the fistu-

Fig. 2.—Longitudinal section through anus and rectum, showing the relative positions of the internal hemorrhoids, external hemorrhoids, and pectinate line.

lous tract; cut down on your groove director and leave the fistulous tract wide open. It may be packed with a little iodoform gauze or some such packing. Never insert any sutures in such a condition. Allow it to heal by granulation.

Cryptitis

Cryptitis is a mild condition and is not very important, although it may be somewhat aggravating. If the patient's rectal mucosa is in good shape, usually such conditions do not arise. They may be associated with hemorrhoids and conditions of that type. They do not give very many symptoms. They may become a little painful, and there may be a little itching. The patient may describe it as a feeling of worms crawling around the rectum, but, as stated before, in such a condition as this, if one will investigate closely, more trouble than a cryptitis will be found, and this is most likely an associated condition.

Treatment of such a condition, if there be no associated condition, is merely to open the crypt and clean the rectum out very frequently. This is not a very important condition, and one does not meet with it very often.

Polyps

Polyps of the rectum are very frequent, particularly in children. The diagnosis is easy. At times a polyp may protrude and the patient has noticed this. If there a polyp, one may feel it by inserting a finger or by passing a small analscope. They are usually in the lower rectum, although they may occur elsewhere. This, again, is another important reason why a proctoscopic and sigmoidoscopic examination should be made during a routine examination to rule out any polypoid condition.

Treatment for polyp of the rectum is surgery. Remove the polyp. This is important because it is a well-known fact now that polyps may become malignant and do become malignant very frequently.

Anal Fissure

Anal fissure is a minor condition, but it produces excruciating pain and is exceedingly aggravating to the patient. The diagnosis is simple. At times one has trouble in finding a fissure, but with careful investigation it can be located with ease as a little fissure-like area. At times it may become infected.

Treatment is excision of the fissure, leaving the wound open, and allowing it to heal by granulation.

There are other minor conditions of the rectum, but they will not be taken up in this paper, as they can be taken care of easily as they arise.

Cancer of the Rectum

This is the most important lesion that one has to deal with in the rectum. Symptoms of such a condition may be very few or there may be no symptoms at all. Many such patients have been operated upon for hemorrhoids, or have had injection treatment for hemorrhoids and various other procedures, since the lesion at the time of such examination was probably so small that it was overlooked, or the patient's symptoms seemed to be referable mostly to the hemorrhoids. Here, again, is a very important reason why all patients should have proctoscopic and sigmoidoscopic examination which should be done with extreme care. The entire mucous lining of the bowel should be observed very closely to see if there is any area at all that looks suspicious or any small ulceration whatsoever. If such is present, the only procedure that should be done is as follows: A small piece should be removed and sent to a competent pathologist for a detailed examination, and nothing more should be done for this patient until this report is returned. Although it may not look malignant grossly, it may be very highly malignant microscopically, and to go on with any other procedure at that time would be a serious handicap to the patient. One should never advise a hemorrhoidectomy until he is absolutely sure there is no other lesion in the rectum. There are a few symptoms of carcinoma of the rectum, such as bleeding, which is the most important, but outside of this there are very few symptoms; and, as a rule, when bleeding has occurred, the process has been going on some time and ulceration has been produced. The patient may think he is bleeding from hemorrhoids and present himself with such a complaint. A careful examination will clear up the diagnosis.

There cannot be enough said about care being taken in diagnosing lesions of the rectum, because early conditions which may be malignant may be taken care of with fairly good prognosis, while, if one waits too long, regardless of what procedure may be done, the prognosis is bad. Even insertion of a finger will help one to clear up the diagnosis. The

patient may not have any symptoms of bleeding whatsoever and may not be conscious of the fact that he has any trouble in the rectum. He may not present himself with a rectal complaint, or he may complain of a little bearing-down pain in the perineal region which is very indefinite. In other words, he may not give any symptoms referable to the rectum whatsoever, and, on examination, unless one inserts the finger in the rectum, a very important condition may be missed. I have seen a fairly large ulcered type of carcinoma of the rectum without any symptoms whatsoever. These lesions commonly occur on the posterior wall of the rectum, but they may occur anywhere. But the most common occurrence is on the posterior wall. They may be so extensive as to involve a large part of the rectal mucosa and almost produce obstruction without any symptoms.

Treatment for carcinoma of the rectum is surgery, provided the lesion is operable. If the lesion is inoperable, then one may use radium, X-ray, etc., as palliative, and not as a curative measure. There is no question that in these inoperable conditions radium is exceedingly important and does a considerable amount of good. One is often confronted with the question as to when a condition is operable and when one is inoperable. Of course, that is fairly easy to determine if the condition is large and has penetrated the rectal walls and involves the prostate. Such a lesion is probably inoperable, and, if the patient has symptoms of obstruction, the only thing to do is a permanent colostomy, followed by treatment of the lesion with radium.

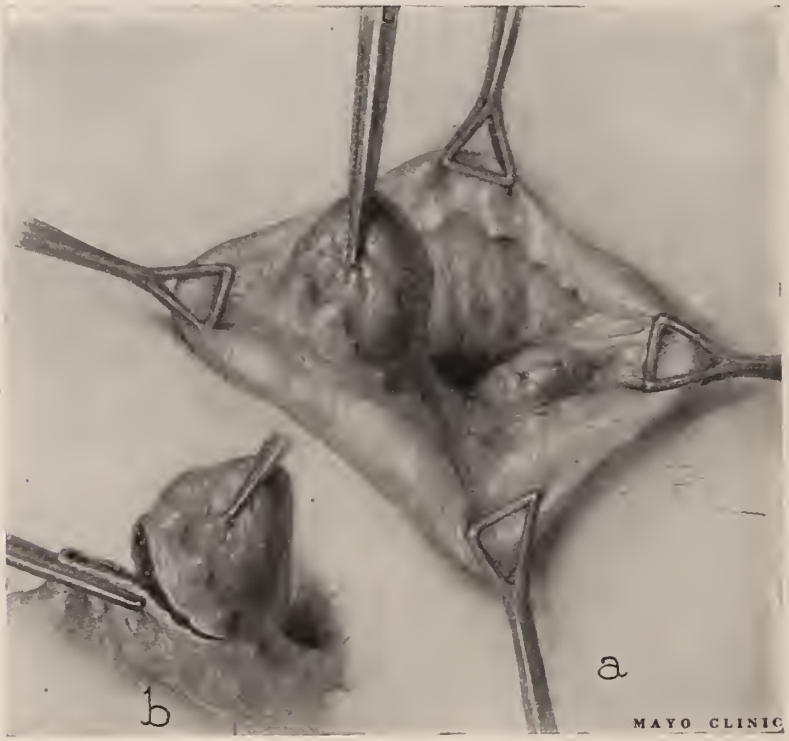


Fig. 3—a. Hemorrhoid operation; Pennington's triangular clamp retracting anal margins; hemostat applied to internal hemorrhoids; b, triangular clamp removed from left, straight clamp applied to skin margin, incision made external to pectinate line.

There is no question that any one who has a cancer of the rectum should have an exploratory laparotomy to determine whether or not there is any metastasis and to determine what further surgery should be undertaken. If there is metastasis in the liver or glands, one may only do a permanent colostomy. On the other hand, if there is no metastasis, the patient should be prepared for a radical operation. Such patients are sometimes given radium before operation, and this reduces the growth somewhat in size, and also clears up some of the inflammation, but most surgeons advise against the use of radium before surgery, because it makes surgery much more difficult to do.

The lesion having been diagnosed as oper-

able, a mid-line incision is made, the upper abdomen explored for metastasis, looking especially at the liver. If no mestastasis is found, a small left inguinal incision is made and a permanent colostomy is done, single barrel type. The distal portion of the descending colon is turned in and left in the pelvis.

The blood supply is not disturbed. Where the colon is brought out through the left inguinal incision, a clamp may be put on and left for seventy-two hours. A Rankin clamp may be used in doing this or most any type of clamp. No sutures should ever be inserted into the bowel in doing a colostomy, because there is a chance of puncturing the bowel and allowing an area for infection to take place lower down. This clamp, which is on the proximal loop, may be loosened in seventy-two hours with safety and a small catheter inserted into the bowel to relieve the gas and distention. Such a colostomy works most satisfactorily. Now the mid-line incision is sewed up. The patient is kept around for three weeks or longer, or may be allowed to go home and return later for the last operation. Usually three weeks is a sufficient length of time to wait before the radical procedure is undertaken. With the colostomy now working very satisfactorily, the last stage of the operation may be completed. The procedure which is used to a large extent now is the combined abdominal-perineal resection. The posterior dissection is carried out first, the patient lying flat on his abdomen while this procedure is being done, and being carried out as in a Kraske's dissection. It may or may not be necessary to remove the coccyx. Having dissected the growth and the rectum out thoroughly, a rubber glove is now put over the growth and rectum and this is pushed in toward the pelvis and a couple of silkworm sutures applied to the skin margin of the wound. The patient is now turned on his back and again an incision is made in the mid-line, when the remaining portion of the sigmoid is entirely dissected out. The growth and the remaining portion of the dissected sigmoid is then delivered out through the abdomen. The pelvic floor is repaired, all raw surfaces are covered with peritoneum, a few drains are inserted, after which the wound is closed. A

Fig. 4.—a. Hemorrhoid operation; crushing clamp applied; excision of hemorrhoid; b, suturing hemorrhoidal stump.

drain is inserted in the posterior wound and this is packed with gauze. This packing should come out in five or six days. In the meantime, the tube which is in the posterior wound may be irrigated the second or third day to loosen up the gauze so it can be removed easily. This is a very radical procedure, but offers the patient the best result. Now every one does not choose to do the abdominal-perineal method. Having performed the colostomy, either of the single barrel type or a simple ordinary colostomy, he may not choose to do the abdominal perineal method. In such case a posterior resection (Kraske's type of operation) may be carried out with very satisfactory results. The advantage of having a single barrel colostomy and doing an abdominal perineal section is that one removes the entire distal portion of the descending colon and sigmoid and at the same time makes a very clear dissection of all the glands that can possibly be removed and offers the patient no doubt a better chance. On the other hand, doing a Kraske's type of operation, that is, a posterior resection, having used an ordinary type of colostomy prior to the operation, one leaves a small piece of the colon distant to the colostomy still present, because a dissection cannot be carried out high enough from behind to get this portion of the sigmoid and descending colon; and, too, he has not made a dissection of the glands, which can be carried out in the abdominal route. But one must bear in mind that there are still a large number of cancers of the rectum treated satisfactorily with merely a simple colostomy and a posterior resection of the rectum (Kraske's type). If the patient is a poor risk and one feels that a combined abdominal-perineal method would be too serious an operation, then I believe a simple procedure as above is usually indicated.

There is another type of operation (Harrison) which is sometimes done for lesions low in the rectum. The lesion may be cut out and the ends of the rectum brought together; this will sometimes give satisfactory results. Of course, this is where the lesion is low and small and one is sure of no metastasis. Even a colostomy may not be necessary in these cases, but it probably would be better to perform a temporary colostomy prior to such an operation. No doubt the healing process would be aided considerably, though one rarely finds a condition so simple as to apply such an operation. All these patients should get deep X-ray therapy after operation.

Lesions of the Sigmoid

Lesions on this portion of the bowel are very common, particularly polyps. This is also a common location for carcinoma. The diagnoses of such lesions are made practically entirely by sigmoidoscopic examination. At the time of the examination, a small specimen should be removed and sent to a competent pathologist. No further examination or treatment should be advised in a patient suffering from such a condition until a report has been given.

I know of nothing of more importance than to have a careful sigmoidoscopic examination. On this portion of the bowel lesions are frequently overlooked until it is too late to do anything much about it. Having once made a diagnosis, the treatment is very simple, although it may be very radical for the patient, as only a few things can be done when once diagnosed in this area.

Polyps are very common in this portion of the bowel, and are usually associated with polyps above, involving the descending colon and transverse colon. It may not be necessary to advise any treatment unless the patient is suffering from such a condition. However, if the polyp on miscroscopic examination shows any sign of undergoing a malignancy, proper treatment should be carried out, for, as we know, polyps frequently become malignant. It was once thought that polyps were benign, but this statement is no longer true. They are a source of future trouble. If such a patient is suffering very much from polyps, the proper treatment should be at once advised.

Treatment for carcinoma of the sigmoid, if a diagnosis has been made early and there is no evidence of metastasis, should be carried out as follows: In all these cases exploration of the abdomen is indicated to determine whether or not there is metastasis. A mid-line incision is usually made for this purpose. Havince once opened the abdomen and thoroughly explored, if there is no sign of metastasis of the liver or glands and if the lesion is in the lower portion of the sigmoid and cannot be brought up and immobilized, the following procedure should be undertaken. A permanent colostomy should be made by bringing it out through a left inguinal incision. This should be a single barrel type colostomy, that is, the distal loop of the big bowel should be turned in and dropped back in the pelvis with a good

blood supply. The proximal loop which should be brought through the left inguinal incision should be clamped with a very tight fitting clamp, and this clamp can be left on for seventy-two hours. No sutures are ever inserted in any colostomy. The inguinal incision should be small so that the bowel fits very snugly. The clamp may be left on, as stated above, for approximately seventy-two hours, and then, if the patient is beginning to suffer from symptoms of obstruction, one may pass a catheter in the bowel and irrigate if necessary. As little manipulation as possible should be done at this time in order to prevent infection around the bowel and until definite adhesions have taken place in such area. Usually insertion of the catheter will relieve the gas distention, and the patient may be greatly relieved. In a few days this colostomy will be working satisfactorily, and the patient will begin to have bowel movements fairly satisfactorily, when it will be perfectly safe to irrigate, and can be cared for accordingly. Such a patient, if in good shape, may remain around the hospital for two or three weeks, or he can be sent home for three weeks or a month, and return later for the second operation. Approximately four weeks will be sufficient length of time before further surgery is undertaken. The patient usually gains strength and feels considerably better after this length of time.

The second part of the operation consists of the following: A combined abdominal-perineal section is done. The posterior resection (Kraske's type of operation) of the rectum and lower part of the sigmoid can be carried out first, and a rubber glove inserted over this portion and dropped back into the lower rectal fossa, after which a few sutures of silkworm are inserted in the skin. The patient now may be turned over on his back and again the midline incision is made and the remaining part of the sigmoid dissected out together with any glands that might be present. A complete dissection is made. The growth, rectum and the sigmoid, are all brought out through the abdominal incision. This having been completed, the pelvic floor is now carefully repaired with peritoneum, all the raw surfaces being covered as carefully as possible. It is always best to insert two or three drains in the pelvis. The abdominal wound is closed in the usual manner. Before the operation is begun, the previous colostomy is well covered to prevent infection of the abdominal wound. The abdominal portion having been completed, the patient's legs are now flexed and a gauze pack is inserted gently in the posterior wound; a rubber tube is usually inserted, also any necessary repairing of the posterior wound and skin margins as may be deemed necessary.

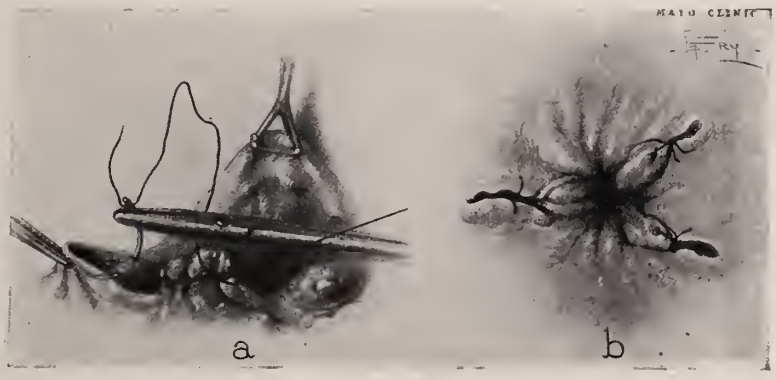


Fig. 5.—a. Carrying suture through structures external to the anal margin (avoiding the skin); b, mucosal stump drawn into the wound by the ligature described in a.

The patient is cared for in the routine manner from now on and usually gets along perfectly all right. The after-care of such patients is extremely important and a routine procedure is usually carried out in all these cases. Nothing is given by mouth for three to four days, and fluid intake is kept up by intravenous administration.

Now, concerning the posterior wound. It is always well to begin to irrigate the wound with potassium permanganate or some such solution about the third or fourth day. This will aid in softening the gauze pack, which should be removed on the sixth day. The pack can usually be removed without much trouble. It is somewhat painful to the patient, but nothing serious usually takes place. The rubber tube

may be left in, if thought advisable, for further irrigation, or it may be removed also, and, if the patient requires further irrigation, a small catheter may be used. This part of the wound usually heals very nicely. Such a patient usually gets out of the hospital in three to four weeks.

Deep X-ray therapy should be carried out, which is more or less routine in these cases, and a properly fitted colostomy bag should be given all of these patients. They can usually carry on their daily routine of life very satisfactorily; and one is amazed at how well they do their work and how well they get along in society. The colostomy usually works so satisfactorily that they are no longer embarrassed to continue their occupation and to go out among people. Such patients are usually very grateful.

A note may be made here that all cases that have rectal and colon lesions are given vaccine intraperitoneally three or four days before the primary colostomy is made. This vaccine is an especially prepared vaccine, usually composed of colon bacilli and other organisms which are found to be normal inhabitants of the bowel. The vaccine is kept constantly on hand and can be made from patients who have been suffering from peritonitis. Such a procedure no doubt helps the patient to fight against a peritonitis which is more or less unavoidable to a certain extent in all these cases. There is no question that the introperitoneal treatment of vaccine has reduced the mortality rate from peritonitis considerably. Such patients may be given the vaccine prior to the colostomy, and another course of vaccine when they report back for the second operation—which may be three to four weeks later. The quantity varies, the technique is very simple, and one usually has no difficulty in carrying out such a procedure.

The illustrations used in this paper were obtained through the courtesy of Dr. Louis A. Buie and W. B. Saunders Company.

MOUSE FAVUS.

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Mouse favus was probably first published by Bennett[1] in England, in 1850. He states that the lesion was on the face of the mouse and that the same cryptogamic vegetations were to be detected as in man. Bazin records that a mouse with favus was caught in a trap in New York in 1854. Two children had apparently become infected with this disease, via a cat from a mouse.

Friedrich,[2] in 1857, described a mouse which was brought to him by a student. The infection involved the whole region between the ears and snout and was manifest by a yellowish white crust like a cap. The clinical picture was that of favus, as were the microscopic findings, although the fungus was believed to differ in some respects from that of human favus.

Zander[2], who first mentions the fatality among mice infected with favus, questioned the identity between the organism of human favus (Achorion schoenleinii) and that of mouse favus, which he termed Achorion bennetti.

Schrader[2] reported an epidemic of mouse

Fig. 1.—Mouse with favus. Lesions on head and thorax.

favus which occurred in an old building; most of the mice caught were affected with favus.

The first evidence that favus of mice can be transmitted experimentally to man was given by Pick[1], in 1865. He induced the disease in man by rubbing the skin with particles from the scutulum obtained from a favic mouse. He concluded that the two diseases are caused by the same parasite.

Von Frauenfell, in 1865, reported an epi-

dermal growth on the ear and head of a house mouse, which he identified as favus.

Tripier[1] observed cases of mouse favus in Lyons, and transmitted the disease experimentally.

Molliere[1] found mouse favus prevalent in Lyons.

Simon[1] examined three mice caught in a workhouse in Hamburg. Favic lesions were well marked in all of the animals. Later many favic mice were secured from the same place. He states that the disease frequently destroys the eyes and may prove fatal to mice.

Anderson[1], in 1868, reported the first European instance of probable natural transmission of the disease from mouse to man. He described several instances of such transmission, among them a case of favus contracted by a young child, probably from a trapped mouse, and later transmitted to other members of the household. This disease in mice was reported as common in many houses in Glasgow.

Spontaneous transmission of favus from mouse to man was also recorded by several writers in Lyons and Bordeaux.

Paton[1] recorded an extensive outbreak of ringworm among soldiers in barracks in England. A cat was found to be seriously affected with favus. This fungus was especially fatal to mice. He found it common in cats and children, and occasionally it infected adults.

Flügge stated that favus in mice had been observed in his laboratory, and that Nicolaier had cultivated the organism and proved the transmissibility of the disease from mouse to mouse. He concluded that there were microscopic differences between the organism of mouse favus and that of human favus.

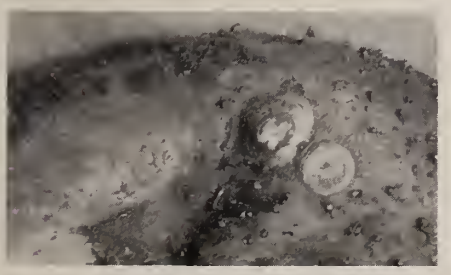

Fig. 2.—Favus on the abdomen.

In 1886, Quincke, studied the organism extensively and showed it to be different from the organism of human favus. Zopf, 1890, gave this organism the name Achorion quinckeanum.

Sherwell[1], in Brooklyn, concluded that a number of cases of human favus were contracted from the lower animals. He mentioned a family in which two members contracted favus from a dog, which had probably been infected from rats and mice. Many mice were seen which had favus.

Hutchins, in Atlanta, Ga., recorded a case of favus of the scalp which occurred in a Negro child. The disease was apparently contracted from white rats.

In 1917, there occurred a most extensive epidemic of favus in field mice in Australia, and the women employed in mending wheat sacks contracted the disease.

Buchanan[1] concludes: 1. There exists in many parts of Europe and in Australia, and probably in the United States and in other parts of the world a disease, mouse favus, the cause of a highly fatal infection among mice and not infrequently transmitted to man, producing a herpetiform favus of the smooth skin. The disease in man usually yields readily to treatment. 2. Samples of mouse skins and of wheat from Australia failed to show evidence of favus. That the disease is prevalent among the field mice that have attacked the Australian wheat stores seems to be established

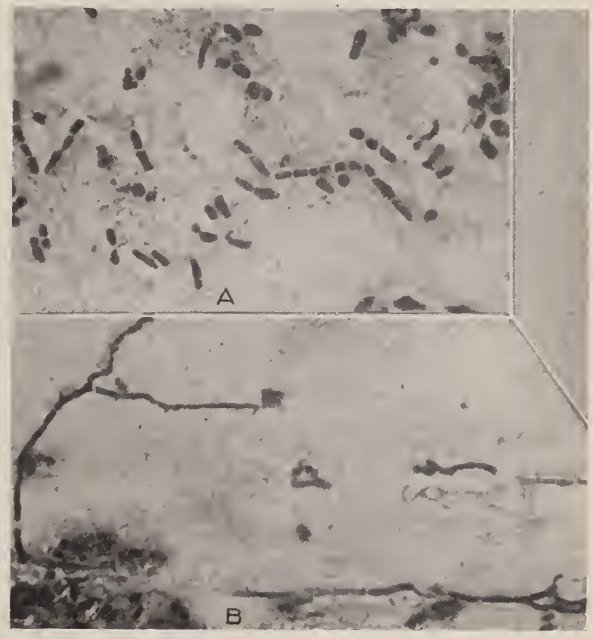

Fig. 3.—Achorion quinckeanum. Stained. 1000X. Oval and rectangular cells in (a). Mycelium in (b).

through the accounts of Paul and of Lawrence. 3. It is not improbable that cases of favus herpeticus may arise occasionally among men who handle the imported Australian wheat or in animals, particularly rodents, that feed on the grain or on certain of the mill by-products. 4. It is not probable that the danger from the disease is great enough, or the disease itself serious enough, to warrant interference with the importation of the wheat from Australia.

As near as we can find out, mouse favus made its first appearance in Richmond about the first of December, 1932. The distribution is, as far as we can tell at the present time, confined to one building. This building is a fire-proof structure of eleven floors. Mice affected with the disease have been caught on most of the floors. The top floor and the roof are used for the storage of grains and feed. The feed comes from all parts of the State, but the points from which the grains

Fig. 4.—Colonies on dextrose agar. One week old. 2X.

used in the making of these feeds come are not known. It is possible that some of the grain comes from a foreign country in which mouse favus is prevalent. Another possibility is that boxed goods, such as glassware packed in straw, coming in from some foreign country might have carried either the skin of a diseased mouse or the fungus might have been distributed throughout the straw. Shipments like this have been received in this building in recent years from a European country in which mouse favus has been prevalent.

For a number of years no foreign ships have put in at the port of Richmond until a month ago, and that boat was from Cuba. No diseased mice have been found about the wharf.

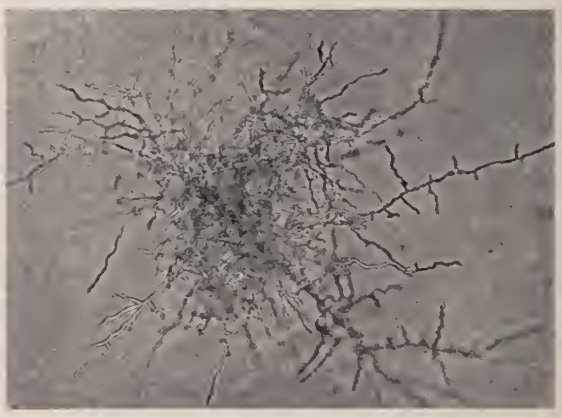

Fig. 5.—Colony 24 hrs. old. 100X.

The building in which the disease was found is removed from the local wharf at least a mile and a half. A number of business houses, wholesale concerns, *et cetera*, adjoining this infected building, have been visited with entirely negative results. The houses which make a business of catching rats and mice have

Fig. 6.—Wet preparation from colony on dextrose agar. Spores and mycelium. 800X.

not seen any condition in these animals that suggests its presence here.

Relative to the number of mice which were infected with favus it might be stated that

on one night there were caught, in one suite of rooms, twenty mice of which nine were infected; at another time thirty-five with thirty infected; at still another time twenty-two with fourteen infected. This is not the total catch; the total far exceeds these figures.

The organism of mouse favus, Achorion quinckeanum, was isolated and grown from ten of the infected mice. Direct examination of the crusts in clearing solution, or by the use of stained slides, shows the fungus consisting of oval or rectangular spores and mycelia threads. The cultivation of the organism shows white colonies with irregular surface and a duvet. These characters are well shown in the illustrations. Microscopic examination of the colony shows spores and mycelial threads.

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INSULIN NEURITIS: A CASE REPORT.

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The number of individuals having diabetes and requiring the subcutaneous injection of insulin daily need not be mentioned. It is, of course, essential to life in many and allows others to partake more freely of a liberal diet and retain their weight and well-being. It is, therefore, well to point out simple measures that may be utilized in order that diabetics receiving insulin may be relieved of symptoms which are probably caused by the continued use of this animal extract.

"Insulin neuritis," so termed, refers to subjective symptoms usually in the lower extremities, as pains, numbness, tingling, thermal changes and the like, which the patient complains of at a rather short interval after the beginning of daily injections of insulin. At times, though rarely, these discomforts are marked and continue as long as insulin is administered. With the discontinuance of insulin, the parasthesias usually disappear in three or four days, only to be manifest again after the resumption of insulin therapy.

No reference to this troublesome condition can be found in the available literature. Neuritis associated with diabetes is a common ailment, and, in fact, neuritic pains are complained of by a large proportion of diabetics. However, these disturbances along the peripheral nerves usually are improved or disappear after the patient is sugar-free. Dr. Frederick Allen[1] feels that "either reduction in sugar or in weight may temporarily aggravate or produce pains, which were formerly latent, but with the control of weight and sugar there is permanent relief of symptoms."

In a personal communication from Dr. E. P. Joslin,[2] he states he has not observed a case of insulin neuritis, and Dr. William Jordan[3] expresses the same view, adding that if insulin produces an anaphylactic skin reaction, it may possibly produce a neuritis, though he knew of no such case. Frank Allen[4] has commented on the local skin sensitivity of some patients to insulin and has advised the change of brand of the secretion of the pancreas, finding that this often immediately relieves the skin irritation.

Utilization of this observation, may assist the clinician in relieving "insulin neuritis."

Case Report

Mrs. E. F. G., age 48, first observed in October, 1931, with a history of having been in poor health for five or six years. Was told she had diabetes six months ago. Many of the prominent symptoms of diabetes were her complaints, namely, polydypsia, loss of weight, pruritus vulvae and history of two carbuncles in the past three years. She had had no subjective symptoms of pain or other peripheral nerve disturbances.

When first seen her blood sugar estimation was 425 mgs. A four plus sugar reaction and a four plus diacetic acid, with a two plus acetone reading were found in the urine.

After hospitalization, her tolerance was found to be about 68 grams of carbohydrates in twenty-four hours and her caloric intake could not exceed about 990 calories without glycosuria. Insulin was given and a diet of 1,536 calories was soon reached, with a carbohydrate-fat ratio of one to one and one-half, using about .7 grams of protein per kilogram body weight.

In order to prevent glycosuria, it was necessary to administer about 45 units of insulin daily. Later, the diet was increased and the insulin dosage kept the same until the patient was able to take about 1,800 calories, with about 110 grams of carbohydrates available in twenty-four hours.

The blood sugar reading ranged from about 130 to 150 mmg. The weight was retained

and she showed marked improvement under this regime until, about four weeks after the beginning of the insulin therapy, she began complaining of numbness, tingling and shooting pains down the lower extremities. These continued to increase in severity and soon necessitated the use of sedatives and analagesics for the relief of these discomforts. A search for the etiology of the parasthesias was unsuccessful. Attempts to determine if the cause were some central nervous system condition, some peripheral vascular pathology, evidence of lower spinal or sacral pressure, or of focal infections, were quite thorough, but no evidence was found to substantiate either. Finally, it was suggested that the patient change the brand of insulin, and this she did, with no relief from her symptoms. Then she was advised to discontinue the use of insulin, and within three days the discomfort had practically ceased.

Immediately, however, her hyperglycemic state returned and it was necessary to again resort to insulin, for the care of her diabetes and resulting acidosis. After using insulin for a few days the symptoms as above reappeared.

Intradermal skin injections of four brands of insulin were tried and all gave slight but definite reaction, save one, and this had not been previously given the patient. Using the same dosage as previously, we began the administration of the new brand, which showed no skin hypersensitivity, and as yet the patient has had no return of her former parathesias and pain. Several weeks ago, as a clinical trial, we again returned to the use of the first brand of insulin and the former discomforts were felt by the patient in about three days. Again, a shift was made and the non-reacting insulin was used daily in the same dosage. Within several days the condition improved and now the patient remains symptom-free and appears to be in nitrogen equilibrium.

There is no attempt made to explain the phenomena described. Whether the condition may have been co-incidental with the diabetes, I am unable to state. Whether the pains and other neuritic discomforts were produced by some form of allergic sensitivity to the particular glandular extract, one cannot definitely state. However, it seems likely that the data as presented is sufficient evidence for a justifiable conclusion that the individual idiosyncrasy to certain forms of insulin was responsible for the symptoms.

It is interesting to note that of the four brands of insulin utilized in this experimental case, three were prepared from the beef pancreas and one from pork pancreas. However, the only product which gave no skin reaction and the one finally selected for permanent therapy, was prepared exclusively from the beef pancreas.

The fact remains that, when an individual develops a hypersensitivity or peripheral nerve disturbances while receiving subcutaneous insulin, it may be advisable to change the brand of the product.

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809 *West Franklin Street.*

CONVULSIONS DUE TO RENAL RETENTION TOXEMIA—CASE REPORT.

ALLEN H. MOORE, M. D., Doylestown, Penn.

Mrs. K. S., age 30, was pregnant about 4 months when she complained of what seemed to her a watery flow from the vagina. Nothing happened until a month later when, after sweeping off a light snow from the sidewalk, uterine pains began. She had a miscarriage. For 2 weeks she had a bloody discharge, and suddenly one morning she went into a convulsion. This convulsion was the first that she had ever had in her life. Another convulsion occurred exactly a week later. Complete urine analysis and blood chemistry failed to show any abnormalities. She was examined after two weeks by a consultant who could not find anything that he thought would account for the convulsions. He did, however, recommend that she have her uterus curetted because of the constant and continued bloody uterine discharge. This treatment was not carried out, but later she passed from the uterus a large piece of retained membranes. The bloody discharge discontinued. Her health improved considerably for about 16 months and then she was seized with another convulsion. As soon as she was conscious, she complained of an excruciating pain in the lumbar region. The pain continued. X-rays showed that she

had a fracture of the 12th dorsal vertebra. The patient was treated for the fracture and was put on a fracture board for 6 weeks. She was allowed to be out of bed but was compelled to wear a spinal brace for 8 months.

The patient again went on for a period of eleven months when she was seized with another convulsion. The patient claims that she knew when this convulsive seizure was coming on, as she had a depressed feeling and was emotional. The day following the convulsion the patient had four hard chills. Let it be remembered that during these convulsions a deep sleep did not follow nor did she at any time become incontinent. All of the convulsive attacks dated from the miscarriage. The convulsions always preceded the menstrual flow. These convulsions have continued up to the present time with increasing frequency.

Laboratory Findings: Blood sugar was 84 mg. per 100 c.c. Creatinin 0.16 N. P. N. 34; Uric acid 2. Wassermann negative. Urine negative.

Physical Examination: Entirely negative with the exception of a slight pelvic disturbance, a moderate retroverted uterus.

Comment: It is to be noted that the patient's domestic tranquillity was unquestioned, and the thought of hysteria was not long entertained.

A positive diagnosis of epilepsy was made by several of the physicians who had seen her in consultation, and luminal was prescribed with the simple statement that there was nothing else to do.

Endocrine disturbance was seriously considered. Her basal metobolic rate was within normal limits, and there were no other findings that even remotely suggested a positive endocrine finding.

Brain tumor certainly had to be ruled out as a real possibility. A detailed X-ray study failed to show any intracranial lesions or pathology.

Renal Disturbance: The patient's high N. P. N. rather definitely established the underlying factor leading to the premature delivery mentioned and the convulsions as arising from renal retention toxemia.

Treatment: *Diet:* This was greatly limited as to proteins and chlorides. Iodized salt was substituted for the ordinary table salt, and this sparingly. Fried foods were avoided. Abundance of fruit and fruit juices, buttermilk and skimmed milk were given. Soggy carbohydrates, such as pot pie, crust of fruit pies, etc., were permitted. Food seasoning was limited. The family was instructed to immediately check up on the food intake for the previous 48 hours as it was likely that some dietic error was contributory to the convulsive cycles.

Varium tablets (5 grains each) were prescribed for at least three months. There were instructions to resort to placental extract one week before the time of an expected menstrual flow should there be any menstrual disturbance with a persistent leukorrhea.

Basham's mixture, 2 drams in water t.i.d., p.c., was given for a week at a time every other week in order to maintain and carry hematinic action.

Prognosis: Guardedly favorable as to duration for years depending upon cooperation by the patient with her family physician.

Question Box

1. Is there a period, even one of brief duration, following transfusion, either direct or indirect, when the patient's blood-clotting is diminished, before it is made quicker? In a recent case, there was decidedly abnormal oozing from every pore, when a preliminary transfusion had been given immediately before operation for bleeding gastro-jejunal ulcer.

Answer. The experience you have had with your patient following a blood transfusion must be an unusual one. I recently had the opportunity of analyzing a series of more than 2,000 transfusions and in this group, not a single patient presented the type of reaction your patient apparently had. Generally speaking the blood-clotting time is not modified by transfusions, except in the event it is given for some unusual type of blood dyscrasias represented specifically by purpura haemorrhagica. It would be interesting to examine the patient's blood for bleeding and clotting time, for it might be that your patient has hemophilia. W. B. P.

2. Why have Virginia physicians drifted so far away from the use of U. S. P. and N. F. preparations into the practice of using ready made proprietaries at much higher prices than similar "officials" which may be made at any good drug store?

Answer. The question you have asked is one of individual practical importance. It is

impossible to give a positive answer as to why physicians do not prefer to use U. S. P. and N. F. preparations instead of proprietary combinations. My impression is that it is due largely to the high pressure advertising which is used in connection with the proprietary substances. Undoubtedly, another explanation is to be had in the supposed superior physiological action of some of the synthetic remedies. Lastly, we are inclined to follow the line of least resistance, and it is much simpler to write into a prescription the trade name of a remedy rather than to utilize our scientific knowledge in the formulation of a sane and effective prescription. W. B. P.

3. Why does the medical profession of the State of Virginia allow the Industrial Insurance companies to take away from the injured patients their rights of selecting their own physicians and force them to go to the physicians selected and paid by the insurance company? Are these injured people not entitled to the same privilege after injury that they have when they get sick, i. e., choosing their own physicians?

Answer. Morally, injured patients should be allowed free choice of physicians. According to the Virginia Workmen's Compensation Act, Section No. 26 of the Code, they do not have free choice as the employee must accept the physician tendered by the employer. In order to change this, the medical profession would have to get through the legislature an amendment to the Workmen's Compensation Act. The insurance companies do not select the physicians, but they do try to persuade the employers to select the ones they favor.

Insurance statistics show a saving of 59 per cent on fracture cases and of 33 per cent on other injuries when the treatment is rendered by the physicians on their lists. Most of these physicians work on a fee for service basis and have no contract either with the employer or the insurance company.

Alex. F. Robertson, Jr.
Chairman, Committee on Public Relations.

MAY DAY—CHILD HEALTH DAY

The slogan for this year is to be "Mothers and Babies First." The American Child Health Association, 450 Seventh Avenue, New York City, advises that the State health officers will be leaders in May Day activities, this year, but they are prepared to furnish suggestions for programs when desired Pamphlets containing this information may be had at 10 cents a copy or at special prices in quantity.

Woman's Auxiliary, to the Medical Society of Va.

President—Mrs. William Lett Harris, 1112 Matoaka St., Norfolk.
President-Elect—Mrs. Joseph Bear, 3012 Monument Ave, Richmond.
Recording Secretary—Mrs. Fletcher J. Wright, 49 S. Market St., Petersburg.
Corresponding Secretary—Mrs. Charles A. Saunders, 1000 Gates Ave., Norfolk.
Treasurer—Mrs. Reuben F. Simms, 2034 Park Ave, Richmond.

Campaigns for Prenatal Care.

Among the days of the year which we commemorate, not one is closer to our hearts than "Mother's Day." Let us this year give it a broader recognition than the wearing of a beautiful rose. Nothing could be finer or more fitting than for the Woman's Auxiliary throughout the State to stimulate interest in the study of the welfare of the prospective mother and to urge upon her the great necessity for prenatal care.

Recent experiments conducted in New York City have proved that 50 per cent of the maternal deaths might have been prevented by adequate prenatal medical attention. It is also known that the health of the child is largely dependent upon his mother's hygienic living before he is born. With this in mind the Maternity Center in New York is conducting an educational campaign centered around Mother's Day to induce expectant mothers to consult a physician early in pregnancy.

In no way could the Woman's Auxiliary render a greater service to the State and to humanity than by promoting similar local campaigns. Suggested plans for conducting such a campaign are as follows:

1. Secure the material used in the campaign from the Maternity Center, 578 Madison Avenue, New York.

2. Select a committee composed of one or more representatives from organizations which seem most interested in this matter, such as the Medical Society, hospitals, health departments, school organizations, Visiting Nurses' Association, T. B. Associations, Red Cross, Woman's Clubs, ministers, etc.

3. Arrange a speaker's bureau whose duty it is to write every organization, white and colored, and ask permission for a speaker from the local Medical Society to give a five minutes talk on Mother's Day to their group.

4. Appoint a publicity committee and a sub-committee. One chairman may handle the newspaper publicity, including the mayor's proclamation on Mother's Day, articles from the President of the Medical Society, the Health Officer, the Director of the Virginia Nurses' Association, the Superintendents of hospitals, etc. Another Chairman may secure space in the street cars and store windows for posters about Mother's Day, and also arrange for announcements in the movies. A chairman to handle the radio will prove of value in promoting the Mother's Day campaign.

5. Select one minister in the community to talk to the other ministers about the campaign, and furnish them with interesting material which can be used in a Mother's Day sermon. Material and cuts for posters, dodgers, newspaper, etc., can be secured from the Maternity Center, 578 Madison Ave., New York City.

I earnestly request that Presidents of Auxiliaries and all interested women give this matter careful consideration.

Mrs. William Lett Harris,
State President.

Auxiliary to Norfolk County Medical Society.

The Norfolk Woman's Auxiliary gave a very delightful Public Relations Tea at the Woman's Club. Representatives from the various schools in the city, clubs, and other organizations were present. A musical program preceded the very delightful talk given by Dr. B. B. Bagby, State Director of Child Welfare. A large and appreciative audience thoroughly enjoyed Dr. Bagby's talk.

The Auxiliary has arranged for a contest between pupils of the two Junior High Schools in Norfolk, an award to be made for the best health paper written by the pupils.

They have also planned for an interesting Health program to be given at the Woman's Club.

The women of the Auxiliary are working in the afternoons, helping to index the library for the Medical Society.

Auxiliary to Richmond Academy of Medicine.

The Auxiliary had as its program in January a most instructive lecture by Dr. Joseph Bear on Prenatal Care. Dr. Bear used lantern slides to illustrate his lecture, which added greatly to its interest.

At the February meeting Miss Frances Helen Zeigler, dean of the school of nursing of the Medical College of Virginia, reviewed Ernest Poole's book, "Nurses on Horseback," in connection with a moving picture, "Frontier Nursing," illustrating the work in nursing being done in the Kentucky mountains.

The Richmond Auxiliary is centering its activities for the rest of the year on plans for assisting the Richmond Academy of Medicine in entertaining the Southern Medical Association, which will meet in Richmond in November. Any suggestions or assistance from other Virginia Auxiliaries will be gratefully received.

A Plea for News.

The State Society is most generous in allowing us space in the Monthly. Let us use it to the best advantage of the Society and to its Auxiliaries. May your State press and publicity chairman urge all Auxiliaries to send in any items of interest at least by the twelfth of each month? The Monthly goes to press about the fifteenth and news cannot be printed which is not on hand before that date. Send your news either to the office of the Monthly or to Mrs. Wm. T. Sanger, 4710 Kensington Avenue, Richmond, Va.

Comments on Advertisers.

Chicago Eye, Ear, Nose and Throat College.

This college is located in Chicago, Ill. Their building is ten stories high. The tenth floor is devoted to offices and operating rooms, while the ninth floor is used for laboratory, X-ray, physical therapy, basal metabolism, photography, and electrocardiography, and is where the instruction and physical therapy treatments are given. A clinic is conducted on the second floor where an average of 150 cases register daily and furnish material for the work.

Two courses are offered at this College.—The Laboratory Course and the Physical Therapy Course. They may be completed in six months. These classes are limited to six students, the courses beginning July 1st and January 1st.

Further information may be obtained from Dr. Wm. A. Fisher, President, Chicago Eye, Ear, Nose and Throat College, 231 W. Washington St., Chicago, Ill.

Mead's 10 D Cod Liver Oil is Made from Newfoundland Oil.

Professors Drummond and Hilditch have recently confirmed that for high vitamins A and D potency, Newfoundland Cod Liver Oil is markedly superior to Norwegian, Scottish and Icelandic Oils.

They have also shown that vitamin A suffers considerable deterioration when stored in white glass bottles.

For years, Mead's Cod Liver Oil has been made from Newfoundland Oil. For years, it has been stored in brown bottles and light-proof cartons.

Mead's 10 D Cod Liver Oil also enjoys these advantages, plus the additional value of fortification with Mead's Viosterol to a 10 D potency. This ideal agent gives your patients both vitamins A and D without dosage directions to interfere with your personal instructions. For samples write Mead Johnson & Company, Evansville, Ind., U. S. A., Pioneers in Vitamin Research.

Truth About Medicine

In addition to the articles enumerated in our letter of December 31, 1932, the following has been accepted:

United States Standard Products Co.
Diphtheria Toxoid—U. S. S. P.

Propaganda for Reform

Hazards of Iodized Oil Injections.—It has been ten years since Sicard and Forestier introduced into medical practice the iodized oils as diagnostic agents. These appeared to offer great possibilities in the localization and definition of certain lesions in the cavities of the body. Occasionally incidents have been reported showing that the injection and retention in the body of these oils are not without danger. In a recent issue of *The Journal*, December 3, 1932, p. 1946, appeared a report of the Council on Pharmacy and Chemistry dealing with the dangers of the injection of iodized oils. The report emphasized anew the necessity for a policy which has guided the Council in its deliberations over the past quarter of a century; namely, that of insisting on due caution in the use of all new methods and preparations until their potentialities for doing damage have been subjected to the test of scientific scrutiny. (Jour. A. M. A., January 7, 1933, p. 46).

Bancroft's Thiocyanate Therapy.—Recently *The Journal* referred to Bancroft's method for the control of narcotic addiction and of the effects of anesthetic drugs. Choosing sodium thiocyanate—also designated rhodanate by some chemists—as the peptizing agent, the Cornell University chemists believed that the sensory nerve colloids are albumin-like and should absorb the thiocyanate ion strongly and be easily peptized by the cell electrolytes. The experiments have recently been criticized as unconvincing by Burkholder, of the department of pathology at the University of Chicago. His results obtained with sodium thiocyanate as an antagonist for ether did not corroborate the conclusions brought forth by Bancroft and Rutzler, that thiocyanate ions antagonize the anesthetic action of ether. In a large majority of the experiments with ether the return to normal of the lid reflexes and other manifestations required a longer time in these experimental animals than in their controls As an antagonist for sodium amytal it was found that the sodium thiocyanate did not shorten the long anesthesia, but instead lengthened it, and decreased instead of increased the respiratory rate. As an antagonist for morphine it was found that the morphine narcosis was not counter-acted in any way and that gradient reduction in the dosage of thiocyanate still proved fatal or toxic. Such a recital of actual attempts to corroborate Bancroft's results warns against undue exploitation of a drug of which the pharmacologic effects are by no means conclusively established. (Jour. A. M. A., January 28, 1933, p. 262).

The Federal Trade Commission.—At various times attention has been called to the good work that is being done by the Federal Trade Commission in protecting the public against misrepresentation or fraud in the medical or quasi-medical fields. Congress has given this Commission power to investigate and take action on cases that involve or that seem to involve what are broadly spoken of as unfair trade practices. Where such investigations prove that unfair trade practices have been indulged in, the Commission can, and in many instances does, obtain from the individual or concern involved a signed stipulation to the effect that the objectionable methods will be abandoned. If a stipulation cannot be arrived at, the Commission may issue what is known as a Cease and Desist Order, in which the person or concern involved is ordered to cease and desist from the objectionable practices. (Jour. A. M. A., January 28, 1933, p. 275.)

Vitamin C—The Antiscorbutic Vitamin.—Of late, progress toward the isolation and identification of some of the vitamins has been greatly accelerated. According to Rygh and his co-workers, the antiscorbutic vitamin can be produced from the long known alkaloid narcotine and is presumably so derived in nature. Unfortunately, the experimental results and conclusions of these investigators have failed of confirmation by a number of scientific workers, both here and abroad. King and his associates venture to identify vitamin C with the hexuronic acid found by Szent-Györgyi in various plant tissues and in the suprarenal structures These biochemists have isolated from orange juice a crystalline product that is protective to the conventional laboratory test animal, the guinea pig, in daily doses of 0.5 mg. If the claims are further substantiated, as now seems likely, a great step in advance will have been taken. In any event, further specific knowledge regarding the precise etiology and cure of scurvy cannot fail to result from these trends in research. (Jour. A. M. A., August 20, 1932, p. 658.)

Croxon Cream.—Inquiries have been received regarding a new-comer to the depilatory field, sold under the trade-marked name "Croxon Cream," by Croxon, Inc. The address of Croxon, Inc., was Suite 1368, 20 West 43rd St., New York City. Investigation proved this to be the same office that had been occupied by Koremlu Croxon was incorporated in January, 1932. Its president was given as A. W. Lublin, presumably the same A. W. Lublin who signed letters for the Koremlu concern as its vice-president. Croxon Cream has been advertised in much the same way that Koremlu Cream was advertised. It is sold under the definite claim that it will *permanently* remove hair. If one is to believe the booklet on Croxon Cream, "thousands of experiments" were made in the alleged research that led to the discovery of this marvelous preparation. Because of the close connection, at least in its genesis, between Croxon Cream and Koremlu Cream, it seemed desirable to find out as early as possible whether Croxon Cream might be another thallium acetate preparation. From an analysis made in the A. M. A. Chemical Laboratory it appears that Croxon Cream is essentially a mixture of sodium perborate, zinc oxide and sinc peroxide in a petrolatum base—three ounces for ten dollars. The amount of petrolatum, sodium perborate, zinc peroxide and zinc oxide found in a ten dollar jar of Croxon Cream could be purchased at wholesale for less than ten cents. While Croxon Cream has none of the viciously dangerous elements found in Koremlu Cream, it is quite worthless as a depilatory for either the temporary or the permanent removal of hair Those who, after purchasing a ten dollar jar of Croxon Cream and finding after weeks of use that the superfluous hair is as thick as ever, are told to purchase "Croxon Depilatory Powder," which is just another sulphide mix-

ture. As to its harmlessness, it may, like any of the alkaline sulphides, if not used with the greatest of circumspection, not merely remove hair temporarily, but also remove the skin. (Jour. A. M. A., August 20, 1932, p. 672.)

Analytic Statements on Labels and in Advertising.—The Committee on Foods reports that analytic statements on labels and in advertising shall be expressed in such terms as will enable correct technical and popular interpretation and be properly and truthfully informative. Listed analytic components shall be named in conformity with the methods used in their determination and preferably those of the Book of Methods of the Association of Official Agricultural Chemists. The percentage values should be expressed in figures with significance only. (Jour. A. M. A., September 3, 1932, p. 833).

Acetarsone (Stovarsol) in Amebiasis.—Reports have appeared on the favorable use of the drug in amebiasis, but they are conflicting as to its therapeutic efficiency and toxicity. Experimentally it has been shown to be approximately four times as toxic as originally noted, when administered orally to rabbits and cats. Clinical cases of poisoning are not uncommon, even when therapeutic amounts of the drug are used. New and Non-official Remedies states that the physician should remember that he is working with a rather toxic arsenical preparation, which may give rise to gastro-intestinal symptoms, as well as to the same cutaneous disturbances that are found with the arsphenamines, and that at the least sign of intolerance the physician should discontinue the use of the drug for the time being. There seems to be no doubt that other amebacides, arsenical and nonarsenical, are available which have equal and greater amebacidal action and are less toxic than acetarsone. (Jour. A. M. A., September 3, 1932, p. 851).

Book Announcements

Office Surgery. By FENWICK BEEKMAN, M. D., Visiting Surgeon, Bellevue Hospital; Visiting Surgeon, Hospital for the Ruptured and Crippled, etc. Everyday Practice Series. Edited by HARLOW BROOKS, M. D. J. B. Lippincott Company. Philadelphia and London. 1932. Octavo of 402 pages. With 94 illustrations. Leather. Price, $5.00.

This book is one of the Everyday-Practice Series, edited by Harlow Brooks, and published by Lippincott. The cover design is a reproduction of the noted "Summa Magistri" by Johannis De Santeo Geminiano, Order of Preaching Brothers, Published in Basle, Switzerland, by Froben and John Petri in 1499.

The book is of the type of many books on surgery which have been published under the title of Minor Surgery, but because of the author's objection to the terms Major and Minor Surgery, he emphasizes the term Office Surgery.

Surgeons everywhere realize now that there is no such thing as minor, as applied to surgery, because all surgery is, or may become, major surgery.

In the preface, the author states that this book is not meant for surgeons, but is intended to enable the practitioner to reach a correct diagnosis and to outline the application of such procedures as have stood the test of time.

The subjects discussed are largely confined to those conditions which appear upon the external surface of the body, or are the result of trauma. Disease of the abdomen and thorax as well as of the deeper tissues of the extremities and head are omitted. It is frankly stated also that surgical operations, even though apparently of minor character, should be performed in a hospital when possible. He informs us that he has regretted more than once that he has undertaken a "simple" operation in his office. The book is brief and quite readable.

It is a great comfort to see that nearly all the illustrations are good and are original. There is a conspicuous absence of old pictures showing advanced disease copied from other books.

The publishers have done a good job. This goes without saying. It is a Lippincott product.

G. P. L.

Improved Technique in the Surgical Treatment of Facial Palsy. The Ballance-Duel Method of Direct Repair of the Injured Nerve by an Autoplastic Graft. By ARTHUR B. DUEL, M. D. Reprinted from The Quarterly Bulletin of the Milbank Memorial Fund, Vol. xi, No. 1, January, 1933. Illustrated pamphlet of 18 pages.

Morale. The Mental Hygiene of Unemployment. For unemployment relief workers, social workers, public health and visiting nurses, community chest executives, public officials, clergymen and members of boards of philanthropic organizations. By GEORGE K. PRATT, M. D. Prepared and approved by The National Committee for Mental Hygiene. 450 Seventh Ave., New York City. 1933. Pamphlet of 64 pages. Single copies 25 cents.

Medical Advertising. By MARY ROSS. (Concluding chapter by Michael M. Davis.) Pamphlet of 72 pages. And **Group Payment for Medical Care.** Pamphlet of 40 pages. Published by the Julius Rosenwald Fund. Chicago. 1932.

Malaria in Florida, Georgia and Alabama. By FREDERICK L. HOFFMAN, LL.D., Consulting Statistician, The Prudential Insurance Company of America, Newark, N. J. Prudential Press. 1932. Pamphlet of 32 pages. Available copies of these publications can be had free on application.

Report on Sixth International Congress of Military Medicine and Pharmacy. The Hague, Netherlands, June, 1931. Report of COMMANDER WILLIAM SEAMAN BAINBRIDGE, M. C.-F., U. S. N. R., for the Delegation from the United States of America. United States Government Printing Office. Washington, D. C. 1933. Octavo of 167-xii pages. Cloth. For sale by the Superintendent of Documents, Washington, D. C. Price, $1.00.

Virginia Medical Monthly

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Editorial

"Comments on the Syphilis Problem in the United States."

An article with the above title was published in the January, 1933, issue of the *Southern Medical Journal*. There were a number of pertinent facts brought out. In discussing the clinical course of the disease the following points were summarized: "(1) Syphilis is highly infectious during the acute phase. Most infections are acquired through contact with the acute disease. (2) Acute syphilis is curable, in the clinical sense of the word. (3) Syphilis acquired early in pregnancy and often, latent or chronic maternal syphilis, results in fetal infection. (4) Fetal and congenital syphilis is preventable by the recognition and treatment of maternal syphilis. (5) Even though the possibility of clinical cure may be remote after the acute stage of the disease has been passed, the serious, late manifestations of chronic syphilis usually may be forestalled and the individual rendered non-infectious by the proper treatment of the latent infection."

Another point of importance brought out is the fact that this infectious disease is characterized by periods of alternating activity and latency. The periods of activity even long after the initial infection may make the patient a source of contagion.

A summary of the statistical data reads as follows: The estimated annual number of cases diagnosed in the United States is 870,000. The estimated annual number of cases of syphilis in pregnancy is 155,636. The estimated annual number of pregnancies terminating in death of infants at or before term is 45,000. Estimated annual number of cases of living infected infants is 78,750. Estimated annual number of cases of neurosyphilis is 60,000. Estimated annual number of cases of cardiovascular syphilis is 70,000. Estimated annual number of deaths from cardiovascular syphilis is 20,000.

This disease is preventable and in the European countries where widespread effort under governmental control has been made, the incidence of the disease has been markedly decreased since 1920. Contrasted with this in the United States where "individualistic systems of medical practice" are in vogue, the disease has not decreased.

There would seem to be no reason why this problem could not be handled properly by the American System of Medicine. The situation, however, is a challenge to the Medical Profession at least to equal, or preferably improve, the results obtained under governmental management. Widespread use of present well-known and accurate diagnostic methods, simple practical public health principles and proper use of the effective therapeutic agents available, will solve the problem. The determining of foci of infection by (1) routine tests, (2) population surveys and (3) *search for the source of the infection in each case*, followed by treatment, make up a practical program to be followed. In this State an efficient diagnostic laboratory service is furnished to physicians without charge and anti-syphilitic drugs

can be obtained from the State Department of Health at very low cost.

The best way to prevent governmental encroachment in this field is for the physician to acquire sufficient knowledge for recognizing the disease and perfect himself in the technique of treating it.

Longevity After Coronary Thrombosis.*

Comment upon any heart condition and its behavior by Dr. Paul D. White, of Boston, is interesting to medical readers. The incidence of coronary thrombosis is recognized more frequently in these days. Probably the malady occurs more frequently in days of human stress and depression. The popular appreciation by medical men of the symptoms of coronary thrombosis is certainly more acute. Recognition of precordial pain of varying sorts, and positions, probably more often cardiac symptoms rather than symptoms of "acute indigestion," is becoming more general. Significance of pain across the chest, associated with exercise or not, now more and more among physicians and laymen takes on a more accurate meaning than heretofore. The imagination of the physician must be alive if a true understanding of the grave possibilities are to be had, as he contemplates common complaints such as "sudden pain over the heart," a "bar across the breast," a pang under the breastbone, a "feeling of constriction or oppression over the front," etc. A like acuteness in appreciation of the meaning of symptoms of this sort arising from coronary occlusions is needed also as one formulates a mental estimation of the value of longevity of such cases. More and more as such patients come to hospitals, clinics, or are seen in their places of business, and in their homes, the course of such cases illustrates the need of the adequate caution in prognosis. The sudden and unexpected death all too often occurs in the very presence of a guarded prognosis, setting forth such a possibility.

It is refreshing, in the light of common experience, to peruse the article by White, which points out, by an illustrative postmortem finding, that the occurrence of infarction occurred probably seventeen years prior to death. This is an encouraging feature in the prognosis of coronary thrombosis when illustrative cases can be cited to show years of useful life may follow coronary occlusion. Immediate and early death in such cases may be considered possibly less frequent, were cases of coronary thrombosis of milder degree more often really diagnosed.

From White's bibliography, one notes that Jegorow tabulated seventeen cases of his own, eight of which were examined after death. The duration of life from the first attack varied from one month to fifteen years. Old infarcts were found in one surviving fifteen years. Again, from White's paper, Parkinson and Bedford, reported on thirty-one cases who had died and sixty-eight known to be alive after coronary thrombosis. The average of the living was thirteen months and the average of patients who died was six months. Again White cites Conner and Holt who analyzed a group of 117 cases surviving after their first attack. Of these patients eighty-eight or 75 per cent lived over a year; sixty-five over two years; forty-nine over three years; forty over four years; twent-five over five years; seventeen over six years; fifteen over seven years; seven over eight years; four over nine years. these same four patients over ten years; three over eleven years; two over twelve years, and one patient over seventeen years. White cites a report in 1931 of 200 of his private cases seen during the period of 1920 through 1929. In 101 of the patients, the average length of life, after the first attack, was one and five-tenths years, ranging from a few hours to eleven years. Of ninety-four known survivors, the average duration of life was three and two-tenths years—from a few months to seventeen and one-half years.

The foregoing brings out the enheartening possibilities of slight prolongation of life in conorary thrombosis, but a reading between the lines of citations impresses even more strongly the gravity of the malady, the early possibility of sudden and immediate death, and importance of keenly appreciating and interpreting all chest-pains or twinges, or pangs over the precordium, in order that every emergency agency may be employed to enable the smitten heart, coronary infarction, to carry on and attain, if possible, an adjustment in coronary circulation.

Bleeding From the Anus.*

This is a common complaint. Secondary anemia not infrequently derives its origin from an often unknown but more or less constant

*Paul D White, *J. A. M. A.*, January 28, 1933.

*Abstract from *Illinois Medical Journal*, on page 293, *J. A. M. A.*, January 28, 1933.

bleeding from the anus. Patients may present grave signs of an apparently obscure malady that rests upon just such a common but overlooked symptom. In ordinary practice an inquiry into this history of bleeding from the anus is important. Drueck points out the significance of bleeding from the anus. The bleeding may be slight or profuse; may be occasional or constant; may be short in duration or may be of long duration. The symptom may be in the form of pure blood, fluid or clotted; it may be mixed with mucus, pus, or feces. Association of straining or pain are occasional and significant. Persistent bleeding, Drueck points out, may be due to internal hemorrhoids; prolapse of the rectum; erosion or ulceration of the rectal wall; cancer of the rectum or sigmoid; stricture; polypi; multiple polyposis or adenoma; and villous growths. When bleeding persists from the anus, one must think of intussusception of the sigmoid, of strangulated hernia, of colitis, ulcerative enteritis, cancer or ulceration of the large and small intestines, of corrosive poisons, of engorgement of portal circulation from cancer of the liver or cirrhosis of the liver.

Practitioners may well give this symptom more careful inquiry. History of bleeding from the anus needs most careful investigation. In such an inquiry may be found the explanation of enigmatic symptoms. The cause of grave symptoms of weakness and anemia may be easily removed while the explanation of more serious maladies may be brought to light.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Opening of Tidewater Classes in Prenatal and Postnatal Care.

Apparently the thickly settled area of the lower Tidewater is a very suitable section for holding post-graduate classes in the winter season. Dr. Lapham's new circuit of courses in prenatal and postnatal care, beginning the last week in January in Norfolk and vicinity, in the first two weeks enrolled seventy-three members and attracted eighteen other visitors. Groups of above average size in each of the centers except one have demonstrated such interest in their study that the rate of those attending, 78.7 per cent, slightly exceeds that of any previous circuit. The excellent cooperation of active local committees and the fact that the success of sixteen preceding classes has brought this work favorably to the attention of the profession are responsible for the increasingly encouraging results.

Apparently some measure of success has been attained in the Joint Committee's effort to increase at the outset of the course the requests for Dr. Lapham to hold individual conferences in the offices of physicians. These requests have heretofore been numerous enough in the later stages of a course, but the Joint Committee has attempted in the new circuit to get this important method of individual instruction started earlier. Four consultations in one center on the day of the second meeting indicate that this unique feature of the Virginia program is being utilized to good advantage.

One notable feature of the response in the new circuit is a greatly augmented demand for the prenatal examination cards distributed by Dr. Lapham. Supplies of these cards have been requested by members of other classes, but in no such volume as exists at the start of the Tidewater courses. The considerable supply of these cards provided by the Joint Committee on Prenatal and Postnatal Instruction will be sent upon request of physicians as long as they are available.

Total and new enrollments and visitors for two meetings in the centers of Dr. Lapham's fourth circuit are as follows:

Suffolk, Mondays: Visiting physician—Dr. R. L. Seward. Total enrollments—10.

Franklin, Tuesdays: Additional enrollments—Drs. P. P. Causey, Linwood Farley, James A. Grizzard. Total enrollments—6.

Portsmouth, Wednesdays: Additional enrollments—Drs. T. S. Cook, J. C. Dunford, E. T. Glover, G. W. Hayes, James Parrish, J. R. St. George. Visiting physician—Dr. Paterson. Total enrollments—16.

Norfolk, Thursdays: Additional enrollments—Drs. G. Bentley Byrd, Cora Z. Corpening, R. B. Nicholls, A. A. Perkins, N. G. Rodman, G. W. Simpson, Harry Sutelan, H. A. Wall. Visiting physicians—Drs. E. R. Altizer, H. G. Ashburn, W. E. Butler, E. L.

Lowenberg, Robert Matthews, Stuart D. Williams. Total enrollments—23.

Norfolk, Fridays (for colored physicians): Additional enrollments—Drs. A. H. Buck, Geo. W. Cardwell, W. P. Collette, B. F. Hutchins, A. C. Johnson. Visiting physicians—Drs. I. Givens, J. D. Jackson. Total enrollments—18.

Reading Lists to be Prepared.

The invitation of the Medical College of Virginia for physicians to take advantage of their library resources, an invitation extended at first hand to the Medical Society and several times through these columns, has now been supplemented by a bulletin describing the Library of the College and the materials which are available for loan throughout the State. After a distribution of the bulletin to all the members of the Medical Society, a generous supply of copies was furnished by the Medical College to Dr. Lapham for distribution in his classes as need for material arises.

Dr. W. T. Sanger, President, and Dr. E. C. L. Miller, Librarian, have approved the proposal that annotated bibliographies of readings cited in Dr. Lapham's course should be prepared for wide distribution to members of the post-graduate classes. Such a leaflet is now in preparation.

Good Attendance in the Third Circuit.

The severity of winter in the western and mountainous sections of Virgina, coupled with a prevalence of seasonal diseases which increased the pressure upon physicians and did not spare them from attack, was unable to check the successful completion of the third circuit of classes in prenatal and postnatal care in Roanoke, Wytheville, Galax, Christiansburg and Pulaski. The enrollment was relatively small, 51 for the circuit, though creditable in proportion to the number of physicians accessible to the centers. Approximately final figures on attendance indicate a better record, with a percentage of 77.1, than in either of the two previous circuits.

On the Side.

Apart from his regular rounds of classes, clinics and conferences, Dr. Lapham has been often called upon for what he chooses to call "extra-curricular activities." Members of his classes have introduced him a number of times for brief talks on his work before civic and luncheon clubs. On another occasion he spoke before the student body of one of the state teachers' colleges. A nurse in a southwestern county undertook to furnish him audiences of 1,200 or 1,500 women if he could spare the time to visit their meetings in the summer. The Southwestern Virginia Medical Society has put him on the program of their regular scientific meeting for March 24th. Most inspiriting of all, perhaps, is the fact that Dr. Lapham was privileged to serve as chairman, at the conclusion of his course in Christiansburg, of a meeting at which a new study group was organized with the commendable ambition of holding bi-weekly scientific meetings.

Future Courses.

The tentative schedule for the assignment of Dr. Lapham during the summer calls for him to divide the time from May 1st until late fall between the far Southwest and the Southside counties in the vicinity of Danville. On the invitation of Dr. Samuel H. Rivers, of Calvin, detailed explanations of this program of instruction have been furnished to representatives of each of the counties constituting the Clinch Valley Medical Society: Drs. J. C. Moore, R. L. Phipps, J. B. Wolfe, J. M. Dougherty, W. C. Elliott and Isaac Pierce. These counties, including four others in the Southwest—Bland, Giles, Washington and Smyth—have a professional population of 200. The opportunity is presented to them of arranging two circuits of five centers each with an enrollment of at least fifty physicians in each circuit and of thus securing Dr. Lapham's services for five consecutive months.

Dr. P. W. Miles, Secretary of the Danville-Pittyslvania Academy of Medicine, reported the most encouraging response in the enrollment of about thirty members for a Danville class. If additional centers can be organized in the surrounding counties, negotiations for which have already begun, the Southside circuit will be begun at the earliest and most convenient time for the members of the classes.

George W. Eutsler,
Secretary, Joint Committee.

Scheduled Clinics

The Post-Graduate Clinics of the Medical College of Virginia will be held earlier this year than usual. The date is set for Wednesday and Thursday, March 22 and 23, 1933. The

program includes clinics in medicine, surgery, obstetrics, and pediatrics in the mornings, and ward rounds in the same subjects in the afternoons, with a round table discussions from 4:00 to 5:30 each evening.

By special arrangements, anyone desiring to attend a particular clinic in the Out-Patient Department can do so in the afternoon from 2:00 to 4:00. All white physicians in the State are invited.

Proceedings of Societies

Wise County Medical Society.

At the meeting of this Society on January 25th, officers were elected for the ensuing year, as follows: President, Dr. N. H. Short, Norton; vice-presidents, Dr. S. H. Rivers, Calvin; Dr. C. H. Henderson, Norton; Dr. E. P. Cox, Norton; and secretary-treasurer, Dr. W. R. Culbertson (re-elected), Norton. Seventeen members were present and enjoyed an interesting program which included a paper by Dr. P. S. Smith, Abingdon, on "Cyclic Vomiting and Migraine in Children," and one by Dr. C. L. Harshbarger, Norton, on "The Early Diagnosis of Pregnancy." The latter paper was accompanied by a demonstration of laboratory technique.

There was a discussion on the subject "Shall We Have State Medical Society Prenatal Clinics?" after which the retiring president, Dr. T. J. Tudor, appointed a committee with Dr. S. H. Rivers as chairman, to assemble the necessary data regarding the regulation of these clinics and to report its conclusions at the next meeting of the Clinch Valley Medical Society to be held in Norton in April.

The Rockbridge County Medical Society.

At a recent meeting of this Society, Dr. S. Beverly Cary, of Roanoke, by special invitation, read a paper, entitled "Electro-Surgery in Vesical Neck Obstructions." Dr. Cary's paper was illustrated with lantern slides. It was most attentively heard, and the numerous questions asked at the conclusion attested the interest aroused.

Eleven of the nineteen members constituting the county society were in attendance at this meeting.

Dr. F. L. Thurman, Buena Vista, is president, and Dr. E. P. Tompkins, Lexington, secretary-treasurer.

Richmond Academy of Medicine.

A program of unusual interest was presented at the meeting of the Academy on February the 14th, with Dr. Carrington Williams presiding. The subject for the evening was a discussion on the Cost of Medical Care, the speakers being Dr. J. Shelton Horsley, of Richmond, who signed the majority report, and Dr. Arthur Christie, of Washington, D. C., who signed the minority report. There were a number of visitors from various sections of the State. Following the meeting, light refreshments were served in the banquet hall of the Academy.

The Mid-Tidewater Medical Society

Held its first quarterly meeting in West Point, Va., January 24th. Dr. Bates, retired as president and with a few appropriate remarks inducted into office the new president, Dr. Blair Spencer. Dr. Spencer has taken a lively interest in the society and while not engaged in active practice at present is head of a Boys' Recreation Camp on the Ware River.

Dr. T. Dewey Davis, Richmond, read a very instructive paper on "Interpretation of Signs in Heart Disease." A full discussion of his paper was had with Dr. J. M. Hutcheson, of Richmond, adding much to its merits.

The doctors were entertained at dinner at Trice Hotel by the local Committee consisting of Drs. Croxton, Cox, Eames, Parker and Harris.

After lunch several matters of business were transacted and a few interesting case reports were made by members and visitors. The whole meeting was instructive and we hope for the society a year of worthy endeavor.

Among those present at dinner were Drs. Tabb, Smith, Spencer, Hawes Campbell, Hawes Campbell, Jr., Eames, Parker, Croxton, Harris, Ferry, Bates, Latane, Cox and visitors Drs. Hutcheson Graham, Davis, of Richmond, and Drs. Eames and Clarence P. Jones, of Newport News.

The next meeting will be held in Saluda on the Fourth Tuesday in April, at 11 A. M.

M. H. Harris,
Secretary.

The Albemarle County Medical Society,

At its January meeting, held the annual election of officers, at which time Dr. Andrew D. Hart, retiring secretary, was elected president, Dr. W. E. Bray vice-president, and Dr. C. Bruce Morton secretary-treasurer. All are connected with the University of Virginia.

New Officers of Medical Societies Not Previously Reported.

As a result of a questionnaire sent to secretaries of the various component societies, last month, the following new officers were noted for societies from which we have had no previous report:

ALEXANDRIA CITY
President—Henry A. Latane, Alexandria.
Secretary—Walter E. Beattie, Alexandria.

AMELIA COUNTY
President—Dr. Geo. A. Arhart, Amelia.
Secretary—Dr. Jas. L. Hamner, Mannboro.

JAMES CITY COUNTY
President—Dr. J. R. Parker, Providence Forge.
Secretary—Dr. L. V. Henderson, Toano.

LOUISA COUNTY
President—Dr. E. B. Pendleton, Cuckoo.
Secretary—Dr. W. C. Mason, Gordonsville.

MEDICAL SOCIETY OF NORTHERN VIRGINIA
President—Dr. E. C. Stuart, Winchester.
Secretary—Dr. J. E. Harris, Winchester.

NORTHAMPTON COUNTY
President—Dr. Carey Henderson, Nassawadox.
Secretary—Dr. W. T. Green, Nassawadox.

PITTSYLVANIA-DANVILLE
President—Dr. M. H. Watson, Danville.
Secretary—Dr. P. W. Miles, Danville.

SECOND DISTRICT
President—Dr. J. A. Grizzard, Drewryville.
Secretary—Dr. O. R. Yates, Suffolk.

SOUTHAMPTON COUNTY
President—Dr. John W. Smith, Branchville.
Secretary—Dr. W. T McLemore, Courtland.

News Notes

"Your Membership is Vital."

There is so much of value in the following statement occurring in the February, 1933, number of *Colorado Medicine*, that we are taking this means of bringing it to the attention of our readers:

"Fraternal orders, social societies and sporting clubs have suffered decreasing memberships during these trying months. Physicians are bearing their share of the fate which has befallen the business world. However, our profession may be proud of its stability. We are beseiged on all sides by forces which would disrupt the practice of medicine. Individually we are powerless against them; organized, we can protect ourselves.

"The officers and committeemen of national, state, and county medical societies are grappling earnestly with the problems which have beset them. Organized efforts are indispensable to success; each individual membership is essential to the organization.

"Watch these columns for accounts of the vital activities which will ensue in this crucial year. Above all, hold fast your membership."

News From University of Virginia, Department of Medicine.

At the meeting of the University of Virginia Medical Society on January 23rd, Dr. J. H. Scherer spoke on Pulmonary Arteriosclerosis and Dr. C. B. Morton on Follow-Up Study of Patients with Peptic Ulcer at the University of Virginia Hospital.

On February 6th Dr. Max Ballin and Dr. Plinn Morse, of the Harper Hospital, Detroit, spoke before the University of Virginia Medical Society on the subject of Parathyroidism.

On February 10th Dr. Hans Zinsser, Professor of Bacteriology and Immunology in the Harvard Medical School, gave an Alpha Omega Alpha Lecture on the subject of Bacterial Variations.

On February 16th Dr. Lawrence T. Royster spoke before the Mid-South Post-Graduate Medical Assembly in Memphis, on the subject of Rheumatic Fever and Rheumatic Heart Disease.

News Notes from the Duke University School of Medicine and Duke Hospital.

On February 2nd, Dr. Eric Matsner, Medical Director of the American Birth Control League, New York City, held a clinic at the hospital on Birth Control Organization and Contraceptive Technique.

On February 11th, Dr. R. V. Funsten, Professor of Orthopedics at the University of Virginia, held a clinic at the hospital on Para-

thyroid Diseases with Relation to Bone Changes.

On February 13th, 14th and 15th, the National Board examinations were given at the medical school, with twenty-eight students taking Part I and four taking Part II.

News Notes from Medical College of Virginia.

Dr. William T. Sanger, President, and Dr. J. L. McElroy, superintendent of college hospitals, attended the annual meeting of the congress on medical education and hospitals in Chicago February 13th and 14th. En route home Dr. Sanger stopped over in Indianapolis for a tour of inspection of the Eli Lilly pharmaceutical house.

Dr. E. E. Pittman, class of '19, now residing at Oak City, N. C., was a recent visitor to the college.

The outpatient department of the college handled 5,379 cases during the month of January, an increase of 861 over the number handled for the same month last year. The maximum number of patients handled a day was 284, and the minimum 145.

The next Saint Philip Hospital post-graduate clinic for Negro physicians will be held June 19th-July 1st. This year Negro physicians will be admitted to this clinic from states other than Virginia. The clinic is made possible through the General Education Board of New York.

Dr. Harry Bear, dean of the school of dentistry, attended the annual meeting of the board of trustees of the American Dental Association in Chicago the early part of February.

Medical College of Virginia Graduate Performs Unusual Operation.

Dr. John W. Worsham, class of '32, Medical College of Virginia, who is serving an internship at the Santa Rosa Infirmary, Santa Rosa, Texas, recently performed a Caesarean operation on a dead mother and saved the life of a four pound baby. The baby is living today and is being kept in an incubator. Only four other like cases ending successfully are reported in medical literature. This was the first Caesarean operation Dr. Worsham had ever performed and he is to be congratulated upon his success.

Faculty and Staff Meetings, Medical College of Virginia.

The regular scientific monthly meeting of the Faculty and Staff of the Medical College of Virginia has been changed from the third Thursday of each month to the first Thursday and the meeting place has been changed from the auditorium of the Saint Philip Dormitory to the auditorium of Cabaniss Hall. The last meeting was held on February 2, 1933, at 8:15 P. M. with the program as follows:

1. "Recent Advances in the Diagnosis and Treatment of Brain Tumors." Dr. C. C. Coleman.
2. "Plastic Surgery of the Face." Dr. J. G. Lyerly.

The next meeting will be held on Thursday, March 2, 1933, in the auditorium of Cabaniss Hall. The program will be as follows:

1. "Clinical Studies on the Blood Sedimentation Rate." Dr. William H. Higgins.
2. "A Case Report of Abdominal Pregnancy." Dr. H. Hudnall Ware, Jr.
3. "Some Contributions of Biochemistry to the Study of Epilepsy." Dr. Sidney S. Negus.

I. A. Bigger, M. D.,
Chairman.

The Tri-State Medical Association of the Carolinas and Virginia

Held its annual meeting in Greenville, S. C., February 13th-15th. There was a registered attendance of about 125 and this was a very interesting meeting. The following are the officers elected for the ensuing year: President, Dr. Francis B. Johnson, Charleston, S. C.; vice-presidents, Dr. John W. Davis, Jr., Lynchburg, Va., Dr. Charles N. Wyatt, Greenville, S. C., and Dr. Foy Roberson, Durham, N. C.; secretary-treasurer, Dr. J. M. Northington (re-elected), Charlotte, N. C. Dr. Howard R. Masters, Richmond, is the new Virginia councilor who was elected for a term of three years.

The 1934 place of meeting is to be selected by the board of councilors, but will be in some Virginia city.

The American Delegation to the Second International Goiter Conference.

The American Association for the Study of Goiter has arranged for a large representative American Delegation to go to the International Goiter Conference at Berne, Switzerland, August 10, 11, and 12, 1933.

The Committee in charge of mobilization of the delegation has secured an exceptionally low

rate for the voyage on the S. S. "President Roosevelt" from New York to Harve and return. The sailing date is July 26th, and the ship should reach the French port August 3rd. This will allow sufficient time for a leisurely trip to Berne, with two or three days for Paris.

A special feature of the going voyage will be a most attractive and educational round-table goiter discussion program. There will be daily sessions, each one of which will be conducted by some outstanding man.

Members of the profession in good standing in their State or Provincial Societies who may wish to join the delegation in an unofficial capacity but allowed full participation in the voyage program and the reduced steamship rates, may do so by communicating with the Geographic Delegate of their Section, any member of the Invitation Committee, or Dr. J. R. Yung, Corresponding Secretary, Terre Haute, Ind. Proof of society standing will be required and should accompany request for enrollment, which is necessary before booking arrangements can be made with the steamship agent in charge of transportation matters. Dr. Martin B. Tinker, 404 Savings Bank Building, Ithaca, N. Y., is the Geographic Delegate for the following states: Maryland, Delaware, New York, Pennsylvania and Virginia.

Graduate From Army Medical School.

First Lieutenants Edward M. Sager, Petersburg, Va., of the class of 1930, Medical College of Virginia, and A. Lacy Tynes, of the same class, University of Virginia, Department of Medicine, were graduated from the Army Medical School, Washington, D. C., on January 27th, and will shortly be given assignments at army stations.

The Tri-State Hospital Association of Virginia, North and South Carolina

Will hold its annual conference in Charleston, S. C., on April 5th, 6th and 7th. An attractive program is being arranged and it is hoped there will be a large attendance. Mr. F. O. Bates, of Roper Hospital, Charleston, is president of the South Carolina section; Dr. Richard Boyd Davis, of Greensbile, is president and Mr. E. G. Farmer, of Wilson, secretary of the North Carolina section; and Dr. John Bell Williams, of St. Luke's Hospital, Richmond, and Mr. M. Haskins Coleman, Jr., of Johnston Willis Hospital, Richmond, president and secretary, respectively, of the Virginia section.

In Interest of Mentally Disordered Patients.

Dr. William F. Drewry, Director of the Bureau of Mental Hygiene, State Department of Public Welfare, has been appointed by the National Committee for Mental Hygiene of which Dr. C. M. Hincks is general director, a member of a new committee—that on Mental Hospitals. This committee consists of twelve psychiatrists, representing different sections of this country. It held its initial meeting January 27th, in New York, a full attendance being present. At this time there was a brief study outline of the present situation relative to the care of mental patients in this period of financial depression. Other meetings will be held from time to time, and the problem of the care of the insane thoroughly studied.

Mr. Arthur W. James, Commissioner of the Virginia State Department of Public Welfare and also State Hospital Commissioner, was one of the invited guests of the committee.

Dr. John Hamilton,

Of the Northampton-Accomac Memorial Hospital, at Nassawadox, Va., attended the meeting of the American College of Physicians in Montreal, Canada, in February, at which time his fellowship in the College was conferred on him.

Dr. W. Lowndes Peple,

Richmond, Va., acted as toastmaster at the dinner of the annual reunion of the veterans of Base Hospital No. 45, held in Richmond on February 25. This organization is sometimes called the McGuire Unit, as it was under the leadership of Dr. Stuart McGuire that it rendered distinguished service in France during the World War.

Honoring Dr. Koch.

In commemoration of the fiftieth anniversary of the discovery of the tubercle bacillus, by Dr. Robert Koch, of Germany, the National Tuberculosis Association last spring issued an English translation of his original report. This report, "The Aetiology of Tuberculosis," was first published in the *Berliner Klinische Wochenschrift*, in 1882, and has been translated by Dr. and Mrs. Max Pinner, with a scholarly introduction by Dr. Allen K. Krause. This contains 48 pages with a green fabricoid cover and is attractively printed and is illus-

trated. They may be purchased for 50 cents a copy from the National Tuberculosis Association. 450 Seventh Avenue, New York City.

Dr. Howard A. Kelly,

Baltimore, Md., was the guest of honor at a dinner given by his friends in that city, on February 20th, the occasion being his seventy-fifth birthday. Dr. Kelly is professor emeritus of gynecology at Johns Hopkins University School of Medicine, but his fame is by no means limited to that section of the country.

Question Box.

In arranging the program for our last annal meeting, it was stated we would have a Question Box should sufficient interest be shown by the number and nature of questions submitted. As very few questions were received, it was decided that it would be impractical to give time to this feature at our meeting but that they should be answered in an early issue of the MONTHLY. Those interested will find the Questions with Answers published on page 747 of this number.

Married.

Dr. James Hunt Royster, Richmond, Va., and Miss Louise Moss, for several years superintendent at Westbrook Sanatorium, Richmond, on February 22nd.

Dr. Manfred Call, III, and Miss Mary Poppenheim Miller, both of Richmond, Va., February 3rd.

Dr. Tyler Robert Boling, Beckley, W. Va., recently of Tazewell County, Va., and Miss Helen Ruth Connell, Richmond, Va., February 18th. They will be located at Beckley, W. Va.

Dr. E. G. Gill,

Roanoke, Va., as governor of the twenty-fourth district, presided at the conference of Lions Clubs in Virginia, which was held in Richmond, February 16th.

Superintendent at Raleigh Hospital.

Dr. Julian W. Ashby, recently assistant superintendent at the State Hospital for Insane, Raleigh, N. C., has been appointed superintendent to succeed Dr. Albert Anderson, deceased.

Dr. Henry E. Davis,

Who has been located in Williamsburg for some time, has opened offices in the new Theater Building, on Duke of Gloucester Street, that place, and will be engaged in general practice. Dr. Davis is a member of the class of 1911, Medical College of Virginia, and was formerly located in Richmond.

Obituary Record

Dr. Armistead Landon Wellford,

Well-known physician of Richmond, Va., died February 1st, after a long illness. He was seventy-five years of age and a graduate of the Medical College of Virginia in 1880. Dr. Wellford had practiced medicine in Richmond for more than forty years, and had been a member of the Medical Society of Virginia for forty-six years. He is survived by his wife and two children.

Dr. Charles Hyde Davidson,

Lextington, Va., died January 23rd from pneumonia. He was born at Kerr's Creek, Va., and was sixty years of age. Dr. Davidson graduated from the University of Virginia, Department of Medicine, in 1894. He had been one of the leading physicians in Lexington for thirty-two years and had been a member of the Medical Society of Virginia for twenty-eight years. Dr. Davidson was a bank director in Lexington and was secretary of the Board of Health of Rockbridge County. His wife and two children survive him.

Dr. Morris Winston Gibbs,

Formerly of Lynchburg, Va., died at his home in Bellevue, Va., January 30th. He was fifty-three years of age and graduated from the Medical College of Virginia in 1912. Dr. Gibbs was formerly a member of the Medical Society of Virginia. His wife and seven children survive him.

Dr. Clifford R. Sperow,

Martinsburg, W. Va., died December 9th of chronic myocarditis. He was fifty-seven years of age and a graduate of the University of Virginia, Department of Medicine, in 1898.

Dr. Hannes Inberg,

Danville, Va., died January 27th, at the age of fifty-three years. He was a graduate of the Bennett Medical College, Chicago, Ill., in 1906. His wife survives him.

Dr. Adam T. Finch.

As we go to press we have just learned of the death of Dr. A. T. Finch, of Chase City. Notice will appear in our April issue.

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